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QUEEN'S UNIVERSITY
AT KINGSTON

KINGSTON ONTARIO CANADA

QUEEN'S UNIVERSITY AT KINGSTON ONTARIO

The Faculty of

ARTS

1957-8

One Hundred and Seventeenth Session

QUEEN'S
UNIVERSITY
LIBRARY



KINGSTON, ONTARIO
CANADA

QUEEN'S UNIVERSITY
CALENDAR OF THE FACULTY OF ARTS

QUEEN'S UNIVERSITY

CALENDAR

OF THE FACULTY OF

ARTS

1957-8

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1957/58

NOTICE

THE CALENDAR OF THE FACULTY OF ARTS *is published some months before the opening of the session. Staff, courses, and regulations will probably be as announced, but the University reserves the right to make changes.*

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The Academic Year *

THE HUNDRED AND SEVENTEENTH SESSION of the University will begin on Thursday, 26 September 1957, at 8 a.m. Convocation will be held on Saturday, 17 May 1958 (this date is provisional).

JUNE

1957

- 15—Last day for receiving applications for fall supplementals without extra fee.
- 25—Last day for receiving applications for fall supplementals with extra fee.

JULY

- 2—Registration and opening of Summer School. Registrations will not be accepted after 2 July unless special arrangements have been made before that date, and on these late registrations an additional fee of \$3 will be charged.
- 10—Last day for receiving applications, from Summer School and extramural students for August examinations and degrees, without extra fee.
- 15—Last day for receiving applications for examinations in Reading Courses on the Honours programme.
- 20—Last day for receiving applications, from Summer School and extramural students, for August examinations and degrees, with extra fee.

AUGUST

- 9—Summer School closes.
- 12—Supplemental examinations for the Faculty of Arts begin.

SEPTEMBER

- 1—Last day for receiving applications for the Robert Bruce Bursaries and grants from the O. M. Montgomery Memorial Fund.
- 17—Last day for registration of extramural students without extra fee.
- 21—Orientation weekend for first year students begins at 9 a.m.
- 23—Registration in Arts begins on 23 September for students who are registering for the first time. This group includes students transferring from other institutions. A late fee will be charged after this date (\$5 on 24 September and \$3 a day thereafter).
- 24—Registration of previously registered students in Honours Courses, in Physical and Health Education, and graduate students. A late fee will be charged after this date (\$5 on 25 September and \$3 a day thereafter).
- 25—Registration of previously registered students in Courses in General Arts and Commerce. A late fee will be charged after this date (\$5 on 26 September and \$3 a day thereafter).

* The term "Academic Year" used in connection with regulations and courses of study refers to the period extending from 1 October to 30 September.

26—Classes in Arts open at 8 a.m. Last day for registration of extramural students with an extra fee of \$3.

28—September examinations in Reading courses begin.

OCTOBER

5—Last day for registration of intramural students who have not previously obtained permission to register later.

12—Fall Convocation.

14—Thanksgiving Day.

15—Last day on which changes in registration may be made.

16—University Day.

DECEMBER

1—Last day for receiving applications and fees from extramural students for January examinations.

Beginning of the mid-year examinations to be announced.

21—Christmas holidays begin at noon.

JANUARY

1958

3—Examinations in half-courses of the first term begin.

6—Classes in courses of the second term begin at 8 a.m. Last day for payment of the second instalment of fees without penalty.

15—Last day for receiving applications from candidates for the M. C. Cameron Scholarship in Gaelic.

FEBRUARY

10—Last day for receiving applications and fees from extramural students for the April examinations and for degrees.

MARCH

1—Last day for receiving manuscripts for university prizes, applications for Research Fellowships, R. Samuel McLaughlin and Leonard Fellowships, and Khaki University and other Scholarships.

15—Last day for receiving applications for degrees from intramural students.

APRIL

1—Written notice due at the Registrar's Office of candidates' intention to compete for Provincial Scholarships and Ontario Matriculation Scholarships.

3—Classwork closes.

4—Good Friday.

5-12—Reading Period.

10—Last day for extramural students to register for the summer session without extra fee.

14—Examinations begin.

17—Last day for extramural students to add classes for the summer session with extra fee.

MAY

17—Convocation for conferring degrees, announcing honours, and distributing prizes and medals. (This date is provisional.)

1957

January

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History of the University

QUEEN'S UNIVERSITY AT KINGSTON owes its origin to the desire of the Synod of the Presbyterian Church in Canada, in connection with the Church of Scotland, for a ministry trained within the country and for educational opportunity for the youth of a growing economy. As early as 1832 the Provincial Government had been petitioned "to endow without delay an institution, or professorships, for the education and training of young men for the ministry in connection with the Synod". This and other representations failing of their object, steps were taken by the Synod to found a college at Kingston on the lines of the Scottish National Universities. On 16 October 1841 a Royal Charter was issued by Her Majesty Queen Victoria for the establishment of Queen's College, Kingston, and the first classes were opened in March 1842, with Reverend Dr. Liddell as Principal. Funds were provided in part by grants from the Presbyterian Church in Scotland and from the Canadian Government, and in part by liberal subscriptions from the friends of the young and growing University. In 1867-8, however, the withdrawal of the Provincial grant, and the failure of the Commercial Bank, almost brought financial disaster. But the crisis was met by the determination of Principal Snodgrass and other self-denying workers, chief among whom was Professor Mackerras. The country was canvassed for subscriptions and as a result of the widespread interest aroused, \$113,000 was added to the endowment.

In 1877 Principal Snodgrass was succeeded by the Reverend G. M. Grant, who for a quarter of a century built with brilliant success upon the foundation laid by his predecessors. Under him the University gained rapidly in size and prestige. By 1881 Queen's had a new building, an enlarged staff, and a great increase of students. In 1887, as the result of an effort in commemoration of the Queen's Jubilee, \$250,000 was raised, resulting in further extension and in the establishment of new professorships.

Principal Grant died in 1902, and was succeeded in the following year by the Very Reverend D. M. Gordon. In 1916, owing to ill-health, Principal Gordon resigned his position, but continued in office until the autumn of 1917 when the Reverend R. Bruce Taylor was appointed his successor. In 1930 Principal Taylor resigned his position to live abroad and Dr J. C. Connell was appointed Acting Principal. He held this position for four months, until October, when W. Hamilton Fyfe, Headmaster of Christ's Hospital, England, and formerly Fellow of Merton College, Oxford, was installed as Principal of the University. Dr Fyfe resigned in 1936 to accept the Principalship of the University of Aberdeen. Dr Fyfe was succeeded by Principal R. C. Wallace, President of the University of Alberta from 1928 to 1936.

Dr Wallace retired in September 1951 and was succeeded by Principal William A. Mackintosh, the first Queen's graduate to hold the Principalship.

In 1854 the Medical Faculty of Queen's was established. It was re-organized in 1866 as the Royal College of Physicians and Surgeons in affiliation with the University, but in 1891 the original status was resumed.

As early as 1870 special classes in English and other subjects were formed for women, but Courses leading to a degree were not opened to them until 1878-9. In 1880 co-education was extended to the medical course, and in 1883 a separate Women's Medical College was opened and affiliated with Queen's. It was closed in 1894, as similar facilities were offered in Toronto and elsewhere. In 1943, for the first time in forty-nine years, women were again admitted to the Faculty of Medicine.

The School of Mining was founded in 1893 under an Ontario charter and was under the control of a separate Board until 1916 when it was amalgamated with the University, and now constitutes the Faculty of Applied Science. In 1943 the Faculty of Applied Science admitted women to the Course for the first time.

In 1907 the Ontario Government established at Queen's a second Faculty of Education for the purpose of providing professional training for teachers in the secondary schools of the Province. In 1920, however, the work of the Faculty was discontinued because of the decision of the Government to extend the scope of the Normal Schools and to create in Toronto the Ontario College for Teachers.

Queen's University, though founded by a church, was dedicated to the nation. As its constituency expanded, its constitution was gradually broadened, until finally in 1912, as a result of an amicable arrangement between the Presbyterian Church and the Trustees of the University, an act was passed by the Dominion Parliament removing the last vestige of denominational control.

The endowment of the University at present exceeds \$7,500,000 and the annual income, derived from all sources, is over \$3,500,000. The registration has grown from 665 in 1900 to 7428 in the present session, and Queen's has become nation-wide in its work and influence.

Government and Administration

The administration of the University is vested in the Board of Trustees, the University Council, the Senate, and the Faculty Boards.

The Board of Trustees

The Board of Trustees consists of *ex-officio* and elective members. The *ex-officio* members are the Chancellor, the Principal, and the Rector. The elective members consist of: one representative from each affiliated college; representatives, as provided for by the Statutes, from the University Council, the Benefactors, and the Graduates; and members elected by the Board of Trustees.

The functions of the Board of Trustees are to manage the finances, to possess and care for the property, to procure legislation, to appoint instructors and other officers, and in general to attend to such external matters as do not relate directly to instruction.

The University Council

The University Council consists of the Chancellor, the Trustees, the members of the Senate, and an equal number of members elected by the graduates from their own members.

The annual meeting of the University Council is held on the day immediately preceding the spring Convocation.

The functions of the Council are:

- (1) to elect the Chancellor, except when two or more candidates are nominated, in which case the election is by registered graduates;
- (2) to elect six Trustees, two of whom shall retire annually;
- (3) to make by-laws governing the elections of (a) the Rector by the registered students, (b) seven Trustees by the benefactors, (c) six Trustees by the University Council, (d) six Trustees by the graduates;
- (4) to discuss all questions relating to the University and its welfare;
- (5) to make representation of its views to the Senate or the Board of Trustees;
- (6) to decide on proposals for affiliation;
- (7) to arrange all matters pertaining to (a) its own meetings and business, (b) the meetings and proceedings of Convocation, (c) the installation of the Chancellor, (d) the fees for membership, registration and voting.

The Senate

The Senate consists of: the Principal; the Vice-Principal; the Principal of Queen's Theological College; the Dean of the Faculty of Arts; the Dean of the Faculty of Applied Science; the Dean of the Faculty of Medicine; three Professors elected by the Faculty of Arts; three Professors elected by the Faculty of Applied Science; three Professors elected by the Faculty of Medicine; one Professor elected by the Faculty of Queen's Theological College.

The functions of the Senate are:

- (1) to determine all matters of an academic character which concern the University as a whole;
- (2) to consider and determine all courses of study leading to a degree, including conditions of Matriculation on recommendation of the respective Faculty Boards; but the Senate shall not embody any changes without having previously presented them to the Faculty;
- (3) to recommend to the Board of Trustees the establishment of any additional faculty, department, chair, or course of instruction in the University;
- (4) to be the medium of communication between the Alma Mater Society and the Governing Boards;
- (5) to determine all regulations regarding the social functions of the students within the University, and regarding the University Library and University Reading Rooms;
- (6) to publish the University Calendars;
- (7) to conduct examinations;
- (8) to grant degrees;
- (9) to award University Scholarships, Medals, and Prizes;
- (10) to enforce the Statutes, Rules and Ordinances of the University;
- (11) and generally to make such recommendations to the Governing Boards as may be deemed expedient for promoting the interests of the University.

The Faculty Boards

The Faculty Boards are constituted as follows:

In the Faculty of Arts and in the Faculty of Applied Science, the Dean, Professors, Associate Professors, Assistant Professors, Lecturers of each Faculty (in Arts, after one year's experience) and the University Librarian have power to meet as separate boards, and to administer the affairs of each Faculty under such regulations as the Board of Trustees may prescribe.

In the Faculty of Medicine, the Dean, Professors, Associate Professors, and Assistant Professors have power to meet as a separate board,

and to administer the affairs of the Faculty under such regulations as the Board of Trustees may prescribe.

The Principal and Vice-Principal are *ex-officio* members of each of the Faculty Boards.

The functions of the Faculty Boards are:

- (1) to recommend to the Senate courses of study leading to a degree, and the conditions of admission;
- (2) to decide upon applications for admission or for change of course, subject to the regulations of the Senate;
- (3) to submit to the Senate names for both ordinary and honorary degrees;
- (4) to arrange the time-table for classes and to edit the Faculty *Calendar*, subject to the approval of the Senate;
- (5) to control registration, and determine the amount of fees and manner of payment, subject to the regulations of the Senate and the approval of the Board of Trustees;
- (6) to deal with class failures;
- (7) to exercise academic supervision over students;
- (8) to make such recommendations to the Senate as may be deemed expedient for promoting the efficiency of the University;
- (9) to award Faculty Scholarships, Medals, and Prizes;
- (10) to appoint within the limits of the funds made available by the Trustees such sessional assistants, fellows, tutors, and demonstrators as shall be needed to give instruction in the subjects taught by the Faculty;
- (11) to pass such regulations and by-laws as may be necessary for the exercise of the functions of the Faculty.

The Faculty of Arts



The Administration

The University

Chancellor

The Honourable C. A. DUNNING, P.C., LL.D.

Chairman of the Board of Trustees

J. M. MACDONNELL, M.C., Q.C., M.A., LL.D., M.P.

Rector

L. W. BROCKINGTON, C.M.G., Q.C., D.C.L., LL.D.

Vice Chancellor and Principal

W. A. MACKINTOSH, C.M.G., M.A., PH.D., LL.D., D.C.L., F.R.S.C.

Vice Principal Emeritus

W. E. MCNEILL, M.A., PH.D., D.C.L., LL.D., F.R.S.C.

Vice Principal and Acting Dean of the Faculty of Law

J. A. CORRY, LL.B., B.C.L., LL.D., F.R.S.C.

Dean of the Faculty of Arts

R. O. EARL, E.D., B.A., S.M., PH.D.

Dean of Women

A. VIBERT DOUGLAS, M.B.E., M.SC., PH.D., F.R.A.S.

Treasurer

M. C. TILLOTSON, M.B.E., B.COM., M.B.A.

Registrar

JEAN I. ROYCE, B.A.

Librarian

H. PEARSON GUNDY, M.A.

Assistant to the Principal

J. A. EDMISON, Q.C., B.A.

Director, Department of University Extension

Director of the Summer School

H. W. CURRAN, B.S., M.A., PH.D.

Other Administrative Officers

University Chaplain — Rev. A. M. LAVERTY, B.A., B.D.

Warden of the Students' Memorial Union — J. E. WRIGHT, M.B.E., E.D.

Medical Officer — H. M. CAMPBELL, M.D., C.M.

Assistant Registrar — K. JEAN RICHARDSON, B.A.

Assistant Treasurer — J. W. BANNISTER, B.Com.

Assistant Director, Department of University Extension
KATHLEEN L. HEALEY

Accountant — T. J. WINNEY

Endowment Officer — MONICA L. MCQUEEN

Director of Publicity — D. G. DEWAR, B.A., B.S.W.

*Secretary of the General Alumni Association and Manager of the
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- W. E. L. SMITH, M.C., M.A. (Toronto), Ph.D. (Edinburgh), D.D. (Toronto). *Associate Professor of History* R.R. No. 2, Kingston
- W. M. SMITH, B.Sc. (New Brunswick), Ph.D. (McGill), Ph.D. (Cantab.), F.C.I.C. *Associate Professor of Chemistry* 40 Napier Street
- J. E. SMYTH, M.Com. (Toronto), F.C.A. *Associate Professor of Commerce* 61 Hill Street
- R. A. STAIRS, B.Sc. (McGill), M.Sc. (University of Western Ontario), Ph.D. (Cornell). *Lecturer in Chemistry* Apt. 4, 10 Birch Avenue
- I. A. STEWART, M.A. (Queen's). *Lecturer in Economics and Assistant Director of Banking Courses* 152 Albert Street
- J. S. SUTHERLAND, M.A. (Toronto). *Instructor in Psychology* 364 Glengarry Road
- H. W. TAYLOR, M.Sc., Ph.D. (Manitoba). *Assistant Professor of Physics* 33 Garrett Street
- H. J. THORBURN, B.A. (Toronto), A.M. (Columbia). *Assistant Professor of Political Science* 99 Division Street
- F. TINDALL, A.B. (Syracuse). *Assistant Professor of Physical and Health Education* 45 West Street
- H. L. TRACY, B.A. (Toronto), Ph.D. (Chicago). *Professor of Classics, and Head of the Department of Classics* Apt. 4, 260 Johnson Street
- ANNA C. TURNBULL, B.Sc.(P.E.) (McGill). *Lecturer in Physical and Health Education* 139 Union Street
- M. C. URQUHART, B.A. (Alberta). *Associate Professor of Economics* 447 Palace Road
- J. L. USHER, B.A. (Sask.), M.Sc., Ph.D. (McGill). *Associate Professor of Geology* 171 McMichael Street, Sub P.O. No. 2
- J. R. W. VALLENTYNE, B.A. (Queen's), Ph.D. (Yale). *Assistant Professor of Biology* 74 Regent Street
- C. J. VINCENT, B.A. (University of Western Ontario), A.M., Ph.D. (Harvard). *Professor of English* 105 Hill Street

The Faculty: Assistants and Tutors

- E. A. WALKER, B.A. (Toronto), M.A. (Cantab.). *Associate Professor of English* 251 Willingdon Avenue
- E. E. WATSON, M.Sc. (McGill), Ph.D. (Cantab.). *Professor of Physics and Chairman of Undergraduate Studies in Physics* 82 Traymoor Avenue
- R. L. WATTS, B.A. (Toronto, Oxon.). *Lecturer in Philosophy* 84 Clergy Street West
- A. S. WEST, B.Sc. (Mass. State), Ph.D. (Yale). *Professor of Biology* 238 Avenue Road
- A. G. C. WHALLEY, M.A. (Oxon.), M.A. (Bishop's), Ph.D. (London), F.R.S.L. *Associate Professor of English* 106 Barrie Street
- R. C. WHEELER, M.Sc. (Queen's), Ph.D. (Cantab.). *Assistant Professor of Chemistry* 851 Johnson Street
- G. N. WHYTE, M.Sc. (Queen's), A.M., Ph.D. (Princeton). *Associate Professor of Physics* 132 Earl Street
- R. C. B. WILKIE, B.Sc., Ph.D. (Edinburgh). *Lecturer in Chemistry* 560 Johnson Street
- J. W. WILKINSON, M.A. (Queen's). *Assistant Professor of Mathematics* 59 Gibson Avenue
- S. F. WISE, B.A., B.L.S. (Toronto), M.A. (Queen's). *Assistant Professor of History* 287 Meadowcrest Road, La Salle Park
- F. M. WOOD, B.Sc., M.A. (Queen's). *Professor of Mathematics* 79 College Street
- F. J. L. YOUNG, M.A. (Queen's), M.A. (St. Andrews). *Lecturer in Industrial Relations* 144 Union Street

Part-time Instructors, Teaching Fellows, and Assistants

- MARGARET ANGUS, B.A. (Montana). *Assistant in Drama*
- BARBARA EXCELL, B.Sc. (New Zealand), M.Sc. (Queensland). *Teaching Fellow in Physiology*
- A. P. FELL, A.M. (Columbia), B.Phil. (St. Andrews). *Teaching Fellow in Philosophy*
- LORETTA JOHNSON, B.A. *Instructor in Spanish*
- MARY MCCALLUM, M.A., LL.D. (Queen's). *Instructor in English*
- ALISON P. SCOTT, B.A., B.Litt. (Oxon.), Ph.D. (Queen's). *R. Samuel McLaughlin Teaching Assistant in German*
- LILLIAN M. STEPHENS, B.A. (Queen's). *Instructor in English*

Tutors for Session 1956-7

Art: D. SNYDER

Biochemistry: ANNA M. BURDITT, B.Sc. (Acadia), R. P. HELDT, D. JUNE IRWIN, JOAN A. KADISH, A.B. (Hunter College), J. I. TOOHEY, L. S. VALBERG, M.D., C.M., (Queen's)

The Faculty: Tutors

Biology: BARBARA M. BASSERMAN, G. R. CORLETT, E. L. FALLEN, B.Sc. (McGill), R. D. LISK, W. J. LUCAS, Mrs. HARRIET MITCHELL, B.A. (Queen's), S. S. H. RIZVI, M.Sc. (Kanpur Agricultural College), K. G. SAMNOTRA, B.Sc. (Punjab), R. M. SMILLIE, M.Sc. (Sydney)

Chemistry: G. C. BECKING, G. F. BENNETT, D. J. BRASCH, M.Sc. (New Zealand), E. J. C. CURTIS, B.Sc. (Bristol), E. L. FALLEN, B.Sc. (McGill), W. R. FEIL, F. W. HOLMES, P. G. HOWE, L. H. JEMPSON, L. M. KALFUSS, B.Sc. (McGill), W. J. KELLY, M. LASH, CLAIRE MARCOUX, D. L. MITCHELL, B.Sc. (Queen's), BARBARA A. MOORE, W. B. PAGE, T. J. PAINTER, B.Sc. (Bristol), M.A. (Queen's), D. POULL, A. ROSENBERG, B.Sc. (McGill), W. SOWA, B.Sc. (Queen's), G. H. S. THOMAS, B.Sc. (Bristol), M. N. TRASK, K. E. VIDMAR, D. J. WALTON, B.Sc. (Bristol), D. R. WOODS

Economics: N. A. ADAMS, A. G. GREEN, J. LEONOR HAW, JANET N. MCDUGALL, W. A. MCKAY, B.A. (Saskatchewan), R. A. MCLARTY, E. H. OKSANEN, M. ANN STEPHENSON, GAIL STEWART, B.A. (Queen's), M.Sc. (London School of Economics), J. R. WINTER

English: JEAN R. F. BAXTER, VICTORIA V. BOROTA, ROSEMARY J. DOUGHERTY, B.A. (Queen's), PATRICIA M. DOUGLAS-MURRAY, B.A. (Queen's), IRENE L. GARDINER, MARGARET R. LEONARD, J. R. JACKSON, E. D. McVEY, B.A. (Queen's), BARBARA A. ROBERTSON, B.A. (Toronto), M.A. (Queen's), C. G. SMITH, CAROL F. VINE, B.A. (Alberta), LOIS E. WASS, JANE WRIGHT

French: Mrs. A. R. C. DUNCAN, GERMAINE L'ABBE, B.A. (Queen's), Mme. A. D. McCONNELL, B.S., C.A.P.

Geological Sciences: R. W. ANSLEY, E. C. APPLEYARD, B.Sc. (University of Western Ontario), G. S. BARKER, B.Sc. (Queen's), R. J. BRADSHAW, H. A. BRIDEN, D. D. BROWN, K. B. CULVER, R. W. DAGENAIS, P. E. GIBLIN, M.A.Sc. (Toronto), P. W. GREEN, A. N. GRUNDER, R. E. HAY, R. L. HERR, R. D. R. HORN, R. K. LAAKSO, D. G. McNEICE, B.Sc. (University of Western Ontario), I. NICHOL, B.Sc. (Durham), D. M. NOWLAN, G. R. PEARSON, B.Sc. (Nottingham), M.Sc. (McMaster), B. A. PERCIVAL, P. J. PIENAAR, B.Sc. (Witwatersrand), M.Sc. (Queen's), J. A. ROBERTSON, B.Sc. (Aberdeen), J. F. SADLER, B.Sc. (London), J. E. G. SCHWELLNUS, B.Sc. (Witwatersrand), M.Sc. (Queen's), D. S. SINCLAIR, C. STONE, A. M. STORONIAK, D. A. TROTTER, C. M. WRIGHT, H. R. WYNNE-EDWARDS, B.Sc. (Aberdeen)

German: MONIKA BRUCHMANN, HELGA LENZ

The Faculty: Tutors

History: MARGARET E. ATACK, B.A. (Queen's), J. G. ARMSTRONG, B.A. (St. Francis Xavier), G. P. C. V. DOUGLAS, B.A. (Queen's), Mrs. H. A. ELLIOTT, B.A. (Bristol), K. H. W. HILBORN, B.A. (Queen's), N. MACDONALD, B.A. (Queen's), M.A. (Harvard), Ph.D. (Edinburgh), G. A. McMAHON, B.A. (Assumption), BARBARA A. ROBERTSON, B.A. (Toronto), B. R. D. SMITH, B.A. (British Columbia), J. D. STEWART, B.A. (Queen's)

Mathematics: M. J. McCLUNG, D. K. SMITH, J. C. TAYLOR, B.Sc. (Acadia), N. E. THOMPSON

Philosophy: MARGARET E. ATACK, B.A. (Queen's), E. J. BOND, M.A. (Queen's), PATRICIA M. DOUGLAS-MURRAY, B.A. (Queen's), A. P. FELL, A.M., B.Phil., J. F. MALCOLM, M.A. (Queen's), Mrs. P. N. S. TROTMAN, M.A. (Oxon.)

Physics: R. R. BOWEN, S. R. BUCHANAN, P. C. CLAPP, P. L. COWAN, R. S. CRABBE, W. R. FRISKEN, B.Sc. (Queen's), A. W. GUIOU, F. N. HAINSWORTH, D. P. H. HASSELMAN, V. R. HENRY, M.A. (Queen's), P. A. HERZBERG, A. F. HOLLOWAY, M.Sc. (Queen's), Ph.D. (London), H. JANZEN, M.Sc. (Queen's), R. A. MORROW, J. G. McCALLUM, G. M. McCracken, B.Sc. (Queen's, Belfast), N. Oleskiw, L. E. G. PARKER, M. REVZEN, B.Sc. (Queen's), L. L. ROBBINS, W. D. ROBERTSON, K. D. SCHUY, S. A. SCOTT, B.Sc. (London), R. S. SMITH, D. E. SMYLIE, D. G. STAIRS, B.Sc. (Queen's), D. R. P. THOMSON, H. T. TOHVER, G. E. TURCOTT, C. J. TURKSTRA, Mrs. E. E. WATSON, B.Sc. (McGill), A.M. (Smith), P. H. WEILAND

Politics: D. ALLAN, C. C. DUNLOP, B.A. (Queen's), J. I. GOW, B.A. (Queen's), A. R. KEAR, B.A. (Queen's), R. A. LITTLE, J. A. MILLARD, B.A. (Toronto), D. R. RICHMOND

Psychology: J. W. CLARK, M.A. (McGill), M. B. EVESON, B.A. (Bristol), OLGA FEDORCHAK, W. A. FRANCIS, WILDA H. HARKER, SHIRLEY E. HENDRY, MARGARET R. LEONARD, H. A. OSSER

Sociology: Mrs. H. G. THORBURN

Spanish: ELEANOR A. SMITH, B.A. (Queen's), Mrs. J. G. SMITH, B.A. (Toronto)

Equipment and Special Features

The Library

The Curators

The Principal, the Vice-Principal, the Principal of Queen's Theological College, the Dean of the Faculty of Arts, the Dean of the Faculty of Applied Science, the Dean of the Faculty of Medicine, the Registrar, Professors A. R. C. DUNCAN, N. A. HINTON, M. M. ROSS, D. L. TOWNSEND.

Library Staff

University Librarian: H. PEARSON GUNDY, M.A. (Toronto).

Cataloguing Division: JESSIE W. DYDE, B.A. (Queen's), B.S. (Columbia), *Head;* HELEN KELLEY, B.A. (Queen's), B.L.S. (Toronto), BLAIR WILMOT, B.A. (Mount Allison), B.L.S. (McGill), JOHN MACKRISS, M.A. (Toronto), B.L.S. (McGill), *Assistant Cataloguers;* PATRICIA DOUGLAS-MURRAY, B.A. (Queen's).

Loan and Reference Division: MELVA EAGLESON, B.A. (Queen's), B.L.S. (Pratt), *Head;* HILARY LITTLE, B.A., B.L.S. (Toronto), LOIS CORBETT, B.A. (Queen's), HAZEL BARKLAY, B.A. (Queen's), ROSEMARY DOUGHERTY, B.A. (Queen's), *Assistants.*

Acquisitions Division: ELEANORE M. ELLIOTT, B.A. (Hon.), Dip.Ed. (Lond.), *Head;* J. D. STEWART, B.A. (Queen's), B.L.S. (McGill), E. J. BOND, M.A. (Queen's), JANICE ORION, B.A. (Hon.) (Lond.)

Government Documents Librarian: K. A. MACKIRDY, M.A. (British Columbia)

Science Librarian: HARRIET SCOTT, M.A. (Cincinnati).

Medical Librarian: To be appointed; *Acting Medical Librarian:* FRANCES FRISKEN, B.A. (Queen's).

Clerical Assistants: EDITH KING, TOVE FRASER, ALICE HAZELGROVE, ETHEL A. MACKINNON, MARGARET ASSELSTINE, FRED WILDING (Book-binder).

Library Instruction

By action of the Faculty of Arts, all first year students in Arts are required to attend, during the fall term, a short course of instruction in the use of the library conducted by senior members of the library staff. Students are assigned to groups for two seminar periods. Announcements of the time and place of meetings will be made during Freshman Week.

The Library

Library Hours

Monday to Friday	Reading Room, 8 a.m. to 10.30 p.m. Circulation and other services, 9 a.m. to 5 p.m.
Saturday	Reading Room, 8 a.m. to 4 p.m. Circulation and other services, 9 a.m. to 12.30 p.m.
Sunday	Reading Room only, 2 p.m. to 5 p.m.

The Douglas Library

The Douglas Library, named for JAMES DOUGLAS, LL.D. (Chancellor, 1915-19), was opened in 1924, after the book collection had been moved from rooms in the Old Arts Building. The nucleus of the library was formed in 1841 by gifts of books from Judge MITCHELL of Vittoria, and from the Synod of the Presbyterian Church. First stored in the tower of old St. Andrew's Church, it was moved three times before 1854 when the University purchased "Summerhill". The library was then housed in one of the rooms in the central block. The first library catalogue, published in 1853, listed 2100 books. By 1860, when a new catalogue was issued, the library had doubled in size; and a third catalogue, in 1875, included about 10,000 volumes. The library was moved in 1880 to the west end of the Old Arts Building, until the Douglas Library was built.

The library owes much to the foresight and initiative of Dr ADAM SHORTT, the Sir John A. Macdonald Professor of Political Science 1881-1908, who also served as Librarian, 1890-9. Dr SHORTT inaugurated the card catalogue and laid well the foundations of the Canadian section, which now, with the addition of the LORNE PIERCE COLLECTION OF CANADIANA, provides research resources of outstanding importance. The JOHN BUCHAN MEMORIAL COLLECTION, donated by Colonel and Mrs R. S. McLaughlin in 1954, includes his personal library of some 4,000 volumes, bound manuscripts of some of his more important works, and his private papers. Also noteworthy are the McNICOL COLLECTION of books and manuscripts relating to telecommunication, the SHORTT-HAYDON COLLECTION of portraits and historical prints, the AUSTIN STAMP COLLECTION, and the MAP ROOM which contains over 6000 maps.

The library regularly receives over 1400 current periodicals. The book stock approximates 290,000 volumes, including extensive holdings of government documents. The card catalogue indexes all catalogued items; the system of classification is that of the Library of Congress.

The Medical Library

The Medical Library subscribes to over 300 current medical journals and has a book stock of about 20,000 volumes. Equipment includes a microfilm reader and a photo-copying service. The library comprises, in addition to stacks, a medical reference room, two periodical rooms, and a faculty reading room.

Departmental Libraries

The following university departments have separate library accommodation, under the control of the central library in which supplementary holdings are housed for all departmental libraries.

<i>Chemistry</i>	Gordon Hall
<i>Biochemistry</i>	Craine Building
<i>Biology</i>	Old Arts Building
<i>Chemical Engineering</i>	Gordon Hall Extension
<i>Civil Engineering</i>	Carruthers Hall
<i>Electrical Engineering</i>	Fleming Hall
<i>Geological Sciences</i>	Miller Hall
<i>Mechanical Engineering</i>	McLaughlin Hall
<i>Mining and Metallurgy</i>	Nicol Hall
<i>Physics</i>	Ontario Hall
<i>Psychology</i>	126 Union Street

The hours of the departmental libraries are determined by the departments concerned.

Facilities for Drama

Convocation Hall, seating 355, is the Queen's theatre. The stage, though small in area, is adequately equipped with three sets of draw curtains and with several three-line sets of rigging operated from a standard pinrail. The lighting equipment, recently rebuilt by electrical engineering students, is especially flexible and versatile.

Beneath the stage are storage space and a workshop for the construction of scenery and properties. There is dressing room space in the basement, besides a make-up room, kitchen, and a comfortable lounge room that is used for classes and rehearsals.

Also in the basement is the large costume storage and sewing room. It contains over ninety Shakespearean costumes and hundreds of others, including a rapidly growing collection of historic dresses, such as the Folger, Macnee, and McGowan collections, gifts from friends of the University.

Music

The MUSIC ROOM in the Douglas Library is furnished and equipped for music study and listening. It contains a collection of gramophone records which is based on the original Carnegie gift and now numbers some three thousand records. The collection is representative in both classical and contemporary fields and gives the students an unusual opportunity for musical experience. The equipment also includes a radio-phonograph of the highest fidelity available and a Steinway grand piano. The room is open to the general student body every evening during the session, and is also made available for the important operatic and symphonic week-end broadcasts.

The Museums

The MILLER MEMORIAL MUSEUM, named in memory of the late WILLET G. MILLER, formerly Provincial Geologist of Ontario, has been erected for the Department of Geological Sciences. The main floor is entirely devoted to museum purposes and contains among other things an excellent collection of economic minerals used in industrial processes; a collection of at least a thousand mounted individual crystals; large collections illustrating the systematic classification of minerals and rocks; another illustrating the ores found particularly in Canadian mines, a stratigraphic assembly of rocks and a paleontological collection illustrating the geologic life record. The museum is now being reorganized by Emeritus Professor M. B. BAKER.

A newly-equipped library and map room at the east end of the Museum afford additional facilities for study and research.

The BIOLOGICAL MUSEUM, in the Old Arts Building, has a large botanical collection illustrating the flora of North America, Europe, Asia, South Africa, and Australia; a zoological collection representing the Canadian fauna by a large number of prepared specimens of mammals, birds, reptiles, fishes, insects, and mollusca.

The Laboratories

The BIOLOGICAL LABORATORIES are in the basement and on the main and the third floor of the Old Arts Building. These consist of laboratories for General Botany, Advanced Botany, Plant Physiology, Invertebrate Zoology and Vertebrate Zoology. For graduate work and research special laboratories are available for investigations in the following fields: plant pathology, cytology, plant physiology, research with radioactive isotopes, paper chromatography, entomology with special emphasis on insect path-

ology and insects as disease vectors, fresh water biology. A special research greenhouse and a room for photographic work are included in the facilities of the Department.

The CHEMICAL LABORATORIES are in Gordon Hall to which a large extension was added in 1949 to provide additional accommodation for Chemistry and to house the Department of Chemical Engineering. In the older building there are laboratories for Electrochemistry and Medical Organic Chemistry on the fourth floor, three laboratories for General Chemistry on the third floor, three laboratories for Quantitative Analysis and one for Organic Chemistry on the second floor, and three for Qualitative Analysis on the first or basement floor. On the fourth floor of the extension are laboratories for Physical and Colloid Chemistry; the third floor contains several offices, numerous research laboratories and a workshop. The second floor has a large laboratory for Organic Chemistry adjoining the Organic laboratory of the older building. In this portion of the building there are a considerable number of research laboratories as well as professorial offices and private research laboratories. The laboratories contain much special research apparatus.

The PSYCHOLOGICAL LABORATORY is situated at 126 Union Street. It contains a room equipped with a one-way screen for observing children being given tests, an extensive library of tests, a library of psychological periodicals and a small library of psychological films. It has seminar and research rooms. The apparatus available includes standard equipment for research and for demonstrations in psychology. There is a small workshop for the construction of apparatus and a dark room.

The GEOLOGICAL AND MINERALOGICAL LABORATORIES which are in Miller Hall are well equipped for both regular class work and research. They include large laboratories for mineral study, blowpipe analysis, general geology, and smaller ones for microscopic study of thin sections of minerals and rocks, and polished sections of ores. Individual collections of minerals, rocks, and ores are readily available. In addition there are a map room, a drafting room, a chemical laboratory, a sedimentation laboratory and dark rooms for optical, goniometric and photographic work. Research laboratories are equipped with modern X-ray spectrometers for crystal study, a Philips X-ray fluorescence analysis attachment with Geiger counter for rapid chemical determinations, a two-metre grating spectrograph for trace element studies, a variable source power unit, a flame photo-meter, and various electric furnaces for high temperature experiments. A technician is available for the preparation of both thin sections

Field Work, Athletics

and polished sections and a well equipped small machine shop is in his charge.

The PHYSICAL LABORATORIES are in Ontario Hall. The basement contains a research workshop, a liquid air plant, a large elementary laboratory, rooms for advanced instruction in optics and in heat, and research rooms. An electron synchrotron, manufactured by the General Electric Company, was installed for research purposes in 1950. It is the only instrument of its type in operation in Canada. The synchrotron accelerates electrons to an energy of seventy million electron volts and produces X-rays. The interactions of these high energy X-rays with the electrons and nuclei of atoms are being studied. In order to provide shielding against the penetrating X-rays, the synchrotron is located in an underground room, with a control desk at ground level. On the main floor of Ontario Hall there are several laboratories for first and second year classes, a laboratory for atomic and nuclear physics, two lecture rooms, and a room suitable for lectures and for working problems. The second floor has two large rooms, laboratories for advanced work in mechanics, electrical measurements, and X-rays, a standard laboratory, and a library. On the third floor there are research rooms, a workshop for the use of graduate students and members of staff, a storage battery room, and the departmental stores.

Facilities for Field Work

GEOLOGICAL SCIENCES. In the vicinity of Kingston a greater variety of economic minerals and metalliferous ores is mined than in any similar area in Canada. Through the kindness of the managers the various mines may be visited by the Geology classes, and students may thus obtain valuable information concerning field conditions.

BOTANY AND ZOOLOGY. Exceptionally good facilities for field study are provided in the vicinity of Kingston by the great diversity of land surfaces and bodies of water. A wide range of plant and animal associations is within easy reach of the University. The University has an experimental station on Lake Opinicon, thirty-two miles from Kingston, for research in land and water biology.

Facilities for Athletics

Queen's University at Kingston provides ample facilities for athletics. The gymnasium is one of the finest in Canada with a swimming pool of full olympic size. In the University grounds is a large covered skating rink with

artificial ice. Adjoining the University is the football field, with the George Richardson Memorial Stadium, given by Dr JAMES RICHARDSON, formerly Chancellor of the University, in memory of his brother, Captain GEORGE RICHARDSON, a graduate of Queen's and a former athlete who was killed in World War I. There is room and equipment for all students who wish to take part in football, hockey, badminton, basketball, field hockey, tennis, track athletics, archery, swimming, diving, boxing, and wrestling. Exceptionally good facilities for skiing are available at Gananoque, about seventeen miles from the University proper.

Students' Memorial Union

Every male student is a member of the Students' Memorial Union, which is really a club where the men of all faculties may meet in a University building designed for that particular purpose and privilege. There are the usual club facilities, a dining hall, lounge and billiard rooms, reading rooms, committee rooms, and guest rooms for alumni and visitors to the University.

General Information

DEGREES

By the Royal Charter granted to Queen's College, it is "willed, ordained and granted, that the said College shall be deemed and taken to be an University, and that the students in the said College shall have the liberty and faculty of taking the degree of Bachelor, Master, and Doctor in the several Arts and Faculties". The degrees at present conferred under the statutes of the University are as follows:

HONORARY DEGREES

Doctor of Divinity, D.D.; Doctor of Laws, LL.D.; Doctor of Science, D.Sc.

DEGREES BY EXAMINATION

Arts—Bachelor of Arts, B.A.; Bachelor of Commerce, B.Com.; Master of Arts, M.A.; Master of Commerce, M.Com.; Doctor of Philosophy, Ph.D.

Theology—Bachelor of Divinity, B.D.

Medicine—Doctor of Medicine, M.D.; Master of Science, M.Sc.(Med.).

Law—Bachelor of Law, LL.B.

Applied Science—Bachelor of Science, B.Sc.; Master of Science, M.Sc.

Nursing—Bachelor of Nursing Science, B.N.Sc.

Physical and Health Education—Bachelor of Arts, B.A.; Bachelor of Physical and Health Education, B.P.H.E.

DIPLOMAS

Medicine—Diploma in Medical Radiology, D.M.R.

Nursing—Diploma in Public Health Nursing; Diploma in Teaching and Supervision in Hospital Schools of Nursing.

HOODS

Each degree has its distinctive hood, as follows:

B.A. Black, bordered with red silk

B.Com. Black, bordered with green silk

General Information

B.P.H.E.	Black, bordered with red silk, bordered with white silk
M.A.	Black, lined with scarlet silk, bordered with scarlet silk
M.Com.	Black, lined with green silk, bordered with green silk
B.D.	Black, lined with purple silk, bordered with purple silk
M.D. and C.M.	Scarlet silk, bordered with white silk
M.Sc.(Med.)	Scarlet silk, lined with white silk, bordered with white silk
B.Sc.	Black, bordered with yellow (old gold) silk
M.Sc.	Black, lined with yellow silk, bordered with yellow silk
B.N.Sc.	White silk, bordered with scarlet silk
LL.B.	Blue silk, bordered with white fur
D.Sc.	Yellow silk, bordered with black
D.D.	Purple silk, lined with white silk, bordered with white
LL.D.	Black silk, lined with blue silk, bordered with blue
Ph.D.	Black silk, lined with purple, bordered with white

COUNCIL OF LEGAL EDUCATION OF GREAT BRITAIN

Queen's University at Kingston has been approved by the Council of Legal Education of Great Britain and her degree examinations now qualify students for admission at any one of the four Inns of Court. Regulations for entry at any one of the Inns may be seen at the office of the Registrar.

MEN'S RESIDENCE

McNeill House, named in honour of Vice-Principal Emeritus W. E. McNeill, is the first unit of a larger building project which will provide accommodation eventually for most of the first year men students and a fair proportion of upperclassmen selected so as to represent the various Faculties and Schools. McNeill House has accommodation for 150 freshmen and 36 upperclassmen in the Faculties of Arts, Applied Science, Law, and Medicine, and the Schools of Commerce and Physical and Health Education, priority being given to fifth year medical students and students in the final years of the other courses. First year students are assigned to double rooms, upperclassmen to single rooms.

Application for a room in McNeill House should be made to the Warden, Students' Memorial Union, Queen's University at Kingston.

CO-OPERATIVE RESIDENCES

Berry House and Collins House, operated by the Science '44 Co-operative Inc., are open to men students of all faculties. Room and board for the session 1956-7 was \$12.00 a week. For further information write to the Membership Committee, 329 Earl Street, Kingston, Ontario, enclosing a self-addressed, stamped envelope.

Women Students, General Information

INFORMATION FOR WOMEN STUDENTS

The Dean of Women has offices in both the New Arts Building and Ban Righ Hall and will welcome enquiries from students regarding anything pertaining to their academic life or other problems before and throughout their university Course.

Accommodation for about 290 women students is provided in Ban Righ Hall and its new Adelaide Wing and in six nearby annexes. All first year students, not resident in the city of Kingston, are expected to live in one of the university residences, and approximately 175 places will be held until mid-September for new students; but if this number prove insufficient the additional new students will be assisted in finding suitable lodgings and will be expected to come to Ban Righ Hall for meals. Permission to make arrangements other than the above must be obtained from the Dean of Women. About 115 upper year students will be in residence.

Ban Righ Hall is to some extent a centre for all women students. It has two common rooms and a dining hall with cafeteria service available to both resident and non-resident students.

During the summer the University residences are open for the benefit of all women students attending the Summer School and the services of the Housing Office are also available. The Ban Righ Dining Hall is open to both men and women staff and students.

Application forms for admission to the University residences and an information leaflet regarding rates, residence rules, etc. may be obtained from the office of the Dean of Women.

Gymnasium Costume. A regular gymnasium costume is worn by women students. This may be ordered at the first gymnasium class in the fall term. White badminton shoes and socks are worn with the suit. Any bathing suit may be worn in the University swimming pool.

Co-operative Residences. Boucher House, operated by the Science '44 Co-operative Inc., is open to women students who have completed their first academic year. Room and board for the session 1956-57 was \$12.00 a week. For further information write to the Membership Committee, 144 Lower Albert Street, Kingston, Ontario, enclosing a self-addressed, stamped envelope.

EXPENSES

At the present time the average cost of a student's board is from \$10 to \$12 a week and for a room from \$5 to \$7 a week.

Lists of boarding houses for men or women students may be obtained from the Secretary, Housing Bureau, Queen's University at Kingston. Men may obtain meals at the cafeteria in the Students' Memorial Union.

For other expenses, see p. 48, FEES.

PHYSICAL WELFARE OF STUDENTS

HEALTH INSURANCE

Queen's University at Kingston administers a Health Insurance Fund by arrangement with the Alma Mater Society and the London Life Insurance Company. The fund is derived from a special fee of \$13.50 paid by each winter student and is used to provide medical and hospital care as follows:

Medical Care

The services of the University Medical Officer are available to students without charge.

Office: Kingston General Hospital—Telephone 22821. Entrance by way of the Ambulance driveway (on Stuart Street, west of Front Entrance), turning left and up the short flight of steps.

Hours: Monday, Tuesday, Thursday, Friday—Women: 4.15 to 4.45 p.m.
Men: 4.45 to 5.45 p.m.

Wednesday and Saturday—Women: 12:30 to 1 p.m.

Men: 1 to 1.30 p.m.

A charge of \$2.00 is made by the Medical Officer for calls to the students' rooms. A student may choose another physician or obtain the services of a specialist, surgeon, or consultant, but the University pays no part of the charge thus incurred, except as follows: If, in the opinion of the Medical Officer, the services of a specialist or consultant are required, the University undertakes to contribute toward the payment of the specialist's fee, \$5.00 for any one disability but will make no payment for dentistry, optometry, X-rays, massage, electrical therapy, and similar special treatments.

The cost of filling prescriptions is not provided by the University. The Kingston General Hospital, between the hours of 3.30 and 4.30 p.m. will fill prescriptions at cost *plus* 10 per cent.

Hospital Care

Of the student fee of \$13.50, \$11.75 is paid to the London Life Insurance Company for the following services:

(a) Hospital services, including room, food, regular floor nursing service, and special services up to \$65 for any single illness, are provided from the day of registration until the final examination is written, to the extent of \$6.50 per day. Any additional payment must be made by the student. Payment is limited to thirty-one days for any single illness

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and will not cover hospitalization of less than eighteen hours. The medical care is provided by the University through the University Medical Officer.

(b) Surgical treatment, including treatment of injuries, is provided without restriction as to the time of hospitalization. The student may choose his own surgeon.

(c) If special nurses over and above the regular staff are required or engaged the cost must be borne by the patient.

PHYSICAL EXAMINATION

All students registering for the first time at a winter session are required to submit a doctor's certificate indicating their physical condition.

X-RAY CHEST SURVEY

By a regulation of the Senate of the University the students in the first and fifth years of the Medical Faculty and the first and final years of the other faculties and schools are required to have an X-ray examination of the chest each year. An appointment is made for each student and anyone who fails to report is required to take the X-ray at some time later at his own expense.

CERTIFICATE COVERING ABSENCE FROM CLASS

A student not receiving hospital care but alleging illness as a reason for missing lectures or laboratory work must present a doctor's certificate immediately at the close of treatment in order to receive consideration.

VACCINATION

Every student registering for the first time must submit evidence of successful vaccination against smallpox.

STUDENT SELF-GOVERNMENT

Queen's was the first University in Canada to introduce student self-government. All students are members of the Alma Mater Society, the chief instrument of student government, and are expected to share in its duties and responsibilities.

ALMA MATER SOCIETY LECTURE

In 1939, as a contribution from the student body to the Centenary Endowment Fund, the Alma Mater Society gave the University its accumulated reserve of \$1,711. The income is used to provide an annual lecture known as the Alma Mater Society Lecture.

FRATERNITIES

By resolution of Senate no student registered with the University may form or become a member of any chapter of any externally-affiliated fraternity or sorority at or near Kingston.

MILITARY SERVICES

UNIVERSITY NAVAL TRAINING DIVISION

The University Naval Training Divisions have been established by the Department of National Defence to select and train suitable young university students for commissioned rank in all branches of the Royal Canadian Navy (Regular and Reserve Forces).

The training programme consists of twenty drill nights per academic year for three winter and two full summer periods of not less than fourteen weeks. The winter training is carried on at the Naval Division in Kingston, HMCS CATARAQUI. The summer training may be taken at the RCN Barracks in Halifax, N.S. or Esquimalt, B.C. and includes training afloat in RCN ships. Cadets are paid for all training and the uniform is provided.

Each year a limited number of students is accepted into the programme to maintain the established complement. They are enrolled as Probationary Cadets in the first month of the academic year and are confirmed in rank before the first winter session is completed. Upon successful completion of the training programme cadets are promoted and may take appointments as junior officers in the RCN (Regular or Reserve Forces). Students from any faculty are eligible.

Under the Regular Officer Training Plan successful applicants who have complete Senior Matriculation are enrolled as Cadets in the Armed Service of their choice and are provided with College or University training with pay. On satisfactory completion of academic and military training, Cadets will be promoted to Commissioned Officer rank in the Regular Force. The privilege of release, if desired, will be granted after three years' Commissioned Officer service.

Cadets are obliged to maintain good standing academically in college and throughout military training. A cadet who fails a year at College or University may, on the recommendation of the faculty and the Service concerned, be permitted to repeat the year at his own expense and, if successful, be reinstated.

Tuition and other essential fees will be paid by the Department of National Defence. The cost of books and instruments up to \$50 per annum will also be borne by the Government. Cadets are paid \$60 a month and

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receive an additional \$65 per month subsistence allowance during the academic year. Uniforms are provided free.

Students registered in technical courses will be entered in the appropriate branch of the Service and will be subsidized for a period of up to four years at university. Students in non-technical courses, in general, are entered in the Executive Branch and are subsidized for two years only.

For information write to The Commanding Officer, UNTD, Queen's University, H.M.C.S. CATARAQUI, 47 Wellington Street, Kingston, Ontario.

CANADIAN OFFICERS' TRAINING CORPS

The Queen's University Contingent of the COTC, formed in 1914 by Lt.-Col. A. B. CUNNINGHAM and re-organized following the First World War by Colonel A. MACPHAIL, C.M.G., D.S.O., is now commanded by Lt.-Col. R. J. KENNEDY, M.C.

The object of the COTC training policy is to qualify selected University undergraduates for commissions on graduation in the various corps of the Reserve Force, and Supplementary Reserve Force of the Canadian Army.

Service in the COTC is on a voluntary basis throughout and should not be confused with the Regular Officer Training Plan (see below).

Students in any Faculty and in any Course are eligible. Candidates must be either Canadian citizens or British citizens resident in Canada and must be able to meet the Army's physical and age requirements.

The training programme consists of short theoretical courses in Military Studies at the University and two or three summer courses of four months at the Regular Force Corps Schools or Units at Officers' rates of pay. Summer training is designed to supplement the student's University Course and the Science Faculty recognizes the appropriate COTC training for purposes of summer industrial credits.

A total of six prizes and scholarships are available exclusively to members of the COTC. Further details may be found elsewhere in this Calendar under "COTC Prizes".

REGULAR OFFICER TRAINING PLAN

Undergraduates desiring to make the Army a career may apply for a permanent commission under the Regular Officer Training Plan. The ROTP is designed to produce officers with university education in sufficient numbers to meet the requirements of the armed forces. Participation in ROTP enables students to support actively Canada's defence programme, and at the same time receive academic and military training for leadership in an honourable profession. Candidates interested in the engineering and science fields are particularly desired.

Financial assistance—Students are paid \$60 per month for the duration of the course plus a subsistence allowance (when food and lodgings are not provided) of \$65 per month. Thus total pay is equivalent to \$125 per month. The cost of books, instruments, tuition, and other essential fees is borne by the Department of National Defence.

Conditions of service—On successful completion of academic and military training, candidates are granted a permanent commission in the rank of Lieutenant in the Canadian Army Regular with the option of applying for release three years thereafter. Limited opportunities for postgraduate study are available to ROTP graduates.

The training programme and admission requirements for ROTP are substantially the same as for the COTC. Candidates are eligible for COTC prizes and scholarships.

Further information on COTC and ROTP may be obtained from the Army Resident Staff Officer, Students' Memorial Union.

R.C.A.F. RESERVE UNIVERSITY SQUADRON

The Reserve University Squadron (Queen's) was organized in 1949 and is commanded by Wing Commander J. E. WRIGHT, M.B.E., E.D.

Undergraduates, male and female, from all faculties are eligible for enrollment in the squadron and each year approximately twenty-five students are selected.

Selected undergraduates are given lectures on general subjects and, in the summer months, are posted to R.C.A.F. stations to receive training in the Aircrew, technical or non-technical branch of their choice.

Cadets are paid, at Pilot Officers' rates of pay, for both winter and summer training, and are provided with uniform, board, lodging, and transportation during the summer.

Cadets are given three years of training and are appointed as officers in the R.C.A.F. reserve on completion of their course.

For undergraduates who may wish to make the R.C.A.F. a career, the opportunity exists for such students to apply for a permanent commission under the Regular Officer Training Plan. Under this plan, allowances are provided by the R.C.A.F. for fees, tuition, books and instruments, and the members receive pay for the whole year. The successful candidate is granted a permanent commission in the Regular Force and must agree to serve a minimum of three years after graduation.

Openings under the ROTP are normally available to all academic years. Complete information is available from the R.C.A.F. Resident Staff Officer in the R.C.A.F. office opposite Clark Hall during the academic year (or from the ROTP Selection Board, National Defence Headquarters, Ottawa, Ontario, at any time).

General Information

EMPLOYMENT SERVICE

An Employment Service has been in successful operation at the University for several years. It is under the jurisdiction of the Service Control Committee of the Engineering Society and administered by the Secretary of the General Alumni Association. It is financed by the Engineering Society and the University. The objects of the Service are to assist graduates in all Faculties to secure suitable positions, and to help students to obtain work during vacation periods. Communications should be addressed to the Manager, Employment Service, Queen's University at Kingston.

REGISTRATION

Intramural students must register in person and they must present their receipted fee sheet at the door of the Registration Hall. Those registering after the first day of the session are charged an extra fee of \$5. In addition those who have not previously obtained permission to defer registration must pay a special late fee of \$3 a day from 24 September to 5 October, if registering in the first year, from 26 September to 5 October, if registering in an upper year. No student may register after 5 October unless he has obtained special permission before the opening of the session. For extramural registration see p. 42.

Admission to the Faculty of Arts

Candidates for admission to the Faculty of Arts should make application during the summer on forms which may be obtained from the Registrar. The application should be accompanied by matriculation or other certificates. These certificates will be returned when the candidate's standing has been determined.

Admission by Matriculation

The requirement for admission to the Faculty of Arts is:

- (a) The Secondary School Graduation Diploma or its equivalent, and
- (b) Grade XIII standing or its equivalent in each of English, Latin or Mathematics (at least two papers)*, a language which may be Latin if Mathematics is offered, and two other subjects, with a minimum average of 60 per cent on all five subjects.

Candidates offering only four of the subjects as specified above may be admitted provided they have at least second class Honours standing on three of them. These students are conditioned in the subject in which they lack standing and they may remove this condition by writing off the Grade XIII paper or papers in the subject concerned or by taking an extra course at the University.

Grade XIII examinations are held in the following subjects: Latin, English, History, Mathematics (Algebra, Geometry, Trigonometry, and Problems), Greek, German, French, Spanish, Italian, Music, Physics, Chemistry, Biology and Geography. The pass standard is fifty per cent in each paper.

Candidates with the Interim First Class Certificate who have successfully qualified for the Permanent First Class Certificate by attending a second year at an Ontario Normal School are allowed towards an Arts degree one course in each of English and History.

A complete outline of the courses for the Honours degree is given under every subject in the departmental regulations. Candidates for admis-

* Candidates entering MATHEMATICS 2 with standing in only two parts of Grade XIII Mathematics are required to attend a tutorial class and pass an examination in the third part before receiving credit for MATHEMATICS 2.

Admission: Matriculation

sion to Honours Courses should write the Grade XIII papers in the two subjects which will be the major and minor for the degree of B.A., and three others chosen from the compulsory courses on the degree programme they wish to follow. *The most useful selection of subjects is listed under the various courses. Other selections are acceptable but must include English and Latin or Mathematics and a language which may be Latin if Mathematics is offered.* Candidates preparing for Honours in English and History are advised to take in Grade XIII

English (Literature and Composition)

History

Latin (Authors and Composition)

one of French (Authors and Composition)

German (Authors and Composition)

Greek (Authors and Composition)

one of Biology (Botany and Zoology), Chemistry, Physics.

Similarly candidates for Honours in Modern Languages are advised to take Grade XIII

English (Literature and Composition)

Latin (Authors and Composition)

two of French (Authors and Composition), German (Authors and Composition), Spanish (Authors and Composition)

one of Biology (Botany and Zoology), Chemistry, Physics.

Candidates interested in Honours Classics are advised to take

English (Literature and Composition)

Latin (Authors and Composition)

Greek (Authors and Composition)

one of Biology (Botany and Zoology), Chemistry, Physics
a fifth subject which may be freely chosen.

Candidates interested in a course in History or Economics or Politics or Philosophy or Psychology are advised to take

English (Literature and Composition)

History

Latin (Authors and Composition) or Mathematics¹ (at least
two of Algebra, Geometry, Trigonometry)

one of Biology (Botany and Zoology), Chemistry, Physics

one of French (Authors and Composition)

German (Authors and Composition)

¹ Candidates for the Honours Course in Economics should offer Mathematics (3 papers): for the Honours Course in Psychology (2 papers—Algebra and Geometry).

Greek (Authors and Composition)

Candidates preparing for a course in Mathematics are advised to take

English (Literature and Composition)

Mathematics (Algebra, Geometry, Trigonometry)

Physics

one of French (Authors and Composition), German (Authors and Composition)

one of a language, a science, History.

Candidates for a course in science are advised to take

English (Literature and Composition)

Mathematics (Algebra, Geometry, Trigonometry)

one of French (Authors and Composition), German (Authors and Composition)

two of Chemistry, Biology (Botany and Zoology), Physics, selected so as to give standing in the two sciences in which the candidate wishes to proceed.

Candidates preparing for Commerce are advised to take

English (Literature and Composition)

Mathematics (Algebra¹, Geometry, Trigonometry)
a language

one of Biology (Botany and Zoology), Chemistry, Physics

one of History, a language, a science not already offered.

Candidates preparing for the General Course are advised to take

English (Literature and Composition)

Latin (Authors and Composition) or Mathematics (at least two of Algebra, Geometry, Trigonometry—see page 35)

A language which may be Latin if Mathematics is offered above

Two further subjects which may be selected at will from the subjects of Grade XIII (see page 35)

Candidates preparing for the Combined Course leading to degrees in Arts and in Physical and Health Education are advised to take

English (Literature and Composition)

A language

Mathematics (at least two papers, of which one should be Trigonometry)

Physics

Chemistry

¹ Students from High Schools of Commerce may offer Grade XIII standing in Mathematics of Investment in place of Algebra as part of the requirement in Mathematics.

Admission: Equivalent Examination

Admission by Equivalent Examination

Examinations Equivalent to the Ontario Secondary School Graduation Diploma

The following certificates recognized as equivalent to the Ontario Secondary School Graduation Diploma may be accepted in so far as they meet the admission requirements of Queen's University:

Alberta	Junior Matriculation (Grade XI)
Quebec	Quebec High School Leaving, or McGill Junior Matriculation
Manitoba	Grade XI
Nova Scotia	Junior Matriculation
Saskatchewan	Grade XI
Newfoundland	Grade XI
New Brunswick	Junior Matriculation
British Columbia	Junior Matriculation (Grade XII)
Prince Edward Island	First Class License or Second Year Certificate from Prince of Wales College

Examinations Equivalent to Grade XIII

The following certificates are recognized as equivalent to the Ontario Grade XIII certificate in the subjects in which at least fifty per cent has been made in each paper:

Quebec	McGill Senior Matriculation, or Senior High School Leaving Certificate
Alberta	Senior Matriculation (Grade XII)
Manitoba	Grade XII
Nova Scotia	Senior Matriculation
Saskatchewan	Grade XII
New Brunswick	Senior Matriculation
British Columbia	Senior Matriculation (Grade XIII)
Prince Edward Island	Honour Diploma of Third Year, Prince of Wales College
England, Northern Ireland and Wales	The General Certificate of the various English Universities and the Welsh Joint Education Committee with passes in at least five subjects of which two must be at the Advanced Level.
Scotland	The Scottish Higher Leaving Certificate

Admission to Advanced Standing

Students applying for admission to advanced standing with allowance on credits at another university must have an official certificate of standing with a statement of honourable dismissal forwarded to the Registrar for consideration. They are given equivalent standing but must comply with all regulations of Queen's University governing the Course they wish to complete.

No credits obtained at another institution are accepted for any of the last five classes offered by a candidate for a degree at Queen's University at Kingston.

Extramural Instruction

All inquiries regarding regulations should be addressed to the Registrar.

Extramural and Summer School Courses are offered for those who are unable to do University work entirely in residence or at regular winter sessions, for teachers who wish to improve their professional qualifications or feel the need of "refresher" courses, and for those who wish to study subjects of interest regardless of degrees or certificates.

The standards for extramural work are the same as for intramural courses, and the same examinations are written by both intramural and extramural students.

Extramural Courses are conducted by correspondence, or in local Tutorial Groups. The written work is examined, graded and returned to the student with criticisms and suggestions.

Tutorial Groups. Within the area from Port Hope to Peterborough and eastward to Smiths Falls and Brockville a programme of fortnightly lectures by the University staff is arranged, provided that there are enough applications from the respective centres.

Summer School Courses are offered for six weeks in July and August, so that extramural students may take some part of their work in the University under the immediate direction of University instructors. Summer School students have full use of the University library and laboratories. There are two kinds of Summer School courses: (a) Courses on the regular curriculum for an Arts degree; (b) Courses in the School of the Fine Arts. A large proportion of Summer School students are working towards a degree; but many students register for both types of courses without seeking credit towards a degree.

Admission

1. *Types of Students.* Three kinds of extramural registration are possible:
 - (a) Regular Students: those who are proceeding to a degree.
 - (b) Special Students: those who do not wish to proceed towards a degree. They may register for any courses in which they are particularly interested but must conform to regulations regarding date of registration,

fees and regularity of work. Special students are subject to all the regulations affecting regular students. This includes those persons registered for diploma or certificate courses and not for degree credit.

(c) Auditors: Students not proceeding to a degree may register for and attend Summer School and Extension classes in which they are interested. Auditors are not required to complete assignments, and are not entitled to write examinations.

2. To register as a Regular Student for extramural work, a candidate must meet the same entrance requirements as an intramural student.

The present requirement for admission to the Faculty of Arts is:

- (a) The Secondary School Graduation Diploma or its equivalent, and
- (b) Grade XIII standing or its equivalent in English, Latin (two papers) or Mathematics (at least two papers),¹ a language which may be Latin if Mathematics is offered, and two other subjects, with a minimum average of 60 per cent on all five subjects.

Candidates offering only four of the subjects as specified above may be admitted provided they have at least second class Honours standing on three of them. These students are conditioned in the subject in which they lack standing and they may remove this condition by writing off the Grade XIII paper or papers in the subject concerned, or by taking an extra course at the University. A course used to remove an entrance condition may not be counted as a credit towards a degree.

3. *Admission by Special Regulation.* Unmatriculated candidates for admission who are over twenty-three years of age, or alternatively, if twenty-one and if they have been out of School for at least two years, may be admitted conditioned in the subjects of matriculation which they lack, if they satisfy the Board of Studies that they can undertake university work with profit. Courses used to remove entrance conditions may not be counted as credits towards a degree.

Students admitted to an Ontario Teachers' College on Grade XII standing who complete successfully the two-year Course as outlined by the Department of Education may register in the Faculty of Arts and make up requirements for the General B.A. by taking fifteen courses including Latin 1 or Mathematics 1 and providing for the regular distribution and concentration of work.

4. Ex-service personnel may be admitted on four subjects of the Secondary School Graduation Diploma (Grade XII): English, French or another language, Mathematics (Algebra, Geometry), one of History, another language, a Science (Physics or Chemistry or Agriculture).

¹ Students preparing for Commerce or Mathematics should take Algebra, Geometry and Trigonometry in Grade XIII Mathematics. Students who enter Mathematics 2 with credit in only two of these must pass the third part before receiving credit for Mathematics 2.

Extramural: Registration

Registration

5. There are two sessions in the year for extramural students. The winter session begins in September and ends with the April examinations; the summer session begins in April and ends with the August examinations. The Summer School forms part of the summer session, though it is possible in certain courses to work extramurally throughout the summer without attending the Summer School.

6. *Dates of Registration.* Winter Session, up to 17 September; Summer Session, up to 15 April. No registrations are accepted after 24 September or 22 April except by special permission. Late registrations are subject to an extra fee. Even if examination returns are not published before the date of registration, registration should be made by the prescribed dates. Adjustment can be made later for failures in past examinations.

7. Ordinarily, no student may register at Queen's University at Kingston in the same session in which he is taking work in another educational institution. In exceptional circumstances the Faculty of Arts may permit deviations from this regulation but at no time may a student carry in all more than the normal weight of work permitted within a session.

8. No student who is registered intramurally may register for extramural work in the same session without the permission of the Executive Committee of the Board of Studies.

9. Regular students may not register in more than two courses or four half-courses in the winter session and two courses or three half-courses in the Summer Session.

10. Courses should be selected to conform with the Curriculum given on page 47 below and with the regulations for concentration, distribution, and sequence of work.

11. A student may not register in two classes which meet at the same hour. Time-tables in the regular and Summer School calendars should be consulted.

12. *Transfer from Extramural to Intramural Registration.* (a) Extramural students may become intramural students during the winter session in those courses in which they have satisfactorily completed the work prescribed up to the date of transferring. Extramural fees already paid will be applied towards intramural fees. (b) Extramural students who transfer to intramural work before January may add enough half-courses to give them five courses in the second term if such half-courses are offered and the prerequisite work has been done.

Residence Requirements

13. Candidates for degree must attend one winter session and two summer schools, or four summer schools and complete within that period not fewer than seven courses. Candidates who complete two classes in an approved tutorial group directed by a University instructor may have the residence requirements reduced by one summer school. A year in residence completed satisfactorily at another Canadian University is considered equivalent in residence credit to one Summer School at Queen's.

Conduct of Courses

The method of extramural instruction necessarily varies with the subject. Detailed information is contained in the instruction sheets provided from time to time. These specify the prescribed reading, indicate exercises and essays to be written, and in some cases give the substance of intramural lectures. The first instalment of work is sent to students as soon as they register. The date of each essay or exercise coming in, and of each criticism or fresh piece of work going out, is recorded at the office of the Department of University Extension. Exercises are examined and returned to the writer with criticism and suggestions. Students should address their work and all inquiries regarding their work to the Department of University Extension, Queen's University at Kingston.

14. *Regularity of Work.* All exercises must be sent in by the dates specified.

15. *Text-books.* Extramural students are expected to buy all text-books prescribed. Text-books may be obtained from the Technical Supplies Store, Queen's University Grounds, Kingston. Students should also make generous provision for the purchase of other books bearing on their work, since the library cannot undertake to satisfy all the needs of students not in residence.

16. *Library.* Three books may be borrowed at one time, provided that no two relate to the same piece of work. Unless a special arrangement is made a book may be kept for only two weeks from the date on which it is received. A deposit is required of extramural students to use the library, \$2.00 for the use of one book, \$4.00 for two books, and \$5.00 for three. One-way postage is deducted from this deposit which also serves as insurance against loss. Books may be changed as often as the

Extramural Examinations

borrower wishes. The unused portion of the deposit is refundable on request if accompanied by the official library receipt of deposit.

All communications concerning books and deposits must be addressed to the Librarian, Queen's University at Kingston.

Examinations

17. Intramural and extramural examinations are the same in all subjects and are held at the same time. It is impossible to modify the examination schedule to suit the personal convenience of students.

18. Final examinations are held in January, April and August.

(a) January: examinations in half-courses;

(b) April: examinations in all whole courses and in half-courses held in the second term;

(c) August: examinations in Summer School and summer extramural courses, and supplemental examinations for candidates who failed in April or were obliged to postpone writing from an earlier occasion.

19. *Application.* For January examinations (half-courses), application should be made by 1 December; for April examinations, by 10 February; for August examinations, by 10 July; for August examinations written as supplementals, by 15 June. For required fees, see p. 46.

20. *Eligibility.* Only those who have fulfilled requirements of registration and regularity of work will be admitted to examinations. No one is eligible who has done less than seven-eighths of the prescribed work. Those who do not fulfil this requirement in any course must reregister and repeat the exercises before qualifying for examination.

21. *Postponement of Examinations.* Students who have qualified for examination (see section 20) may postpone writing for two years from the date of the first registration in the course concerned. Those who elect to postpone examinations do so at their own risk. Courses may be discontinued or changed and special papers cannot be set. Those who postpone beyond the limit specified above must repeat the tutorial work of the course.

22. *Oral and Practical Tests* prescribed by modern language and science departments must be taken at the University. In modern languages these tests are held at the end of March or at the close of the Summer School.

23. *Failures and Supplementals.* (a) A student who fails a course but has obtained at least 35% may write a supplemental at the next regular examination period provided that a supplemental is offered in

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the course concerned. (b) Students who fail in any course may not come up again for examination in that course except for a supplemental examination as provided in section (a) above without re-registering in the course and repeating the full work.

24. *Rewriting for Higher Standing.* Students who have passed a course may write for higher standing. This privilege is extended to the third examination period after the first time of writing and it may be exercised only three times in all. Ex-service men and women affected adversely by this regulation may be given consideration by the Board of Studies who will recommend action to the Faculty of Arts.

25. *Local Examination Centres.* Examination centres for extramural students have been established in most of the larger cities and towns throughout Canada. A list of these centres is sent to all applicants for examination. Applications for the establishment of new centres will be considered; the application, accompanied by a fee of \$10, should reach the University by the dates specified in Regulation 19 above.

26. *Standing.* (a) in Pass courses numbered under 10, Grade A—75 per cent; Grade B—62 to 74 per cent; Grade C—50 to 61 per cent. (b) in Honours courses numbered 10 or over and Reading courses, Grade A—75 per cent; Grade B—66 to 74 per cent; Grade C—55 to 65 per cent; Grade D—50 to 54 per cent. (c) Standing of 62 per cent or more on courses numbered 10 or over counts as B grade towards a General degree. Grade D standing on an Honours course counts towards a General degree but carries no credit towards an Honours degree.

27. *Degree at Queen's University at Kingston.* No credits obtained at another institution are accepted for any of the last five courses offered by a candidate for a degree at Queen's University at Kingston.

Fees

28. Extramural and Summer School fee—(This is an inclusive fee covering Registration, Tutorial work, Summer School, Examinations (except supplementals), Library, Athletic, Union and Medical Fees.)

Each whole course taken extramurally	\$50.00
Each half-course	25.00
Each class taken at the Summer School	60.00

(The Summer School fee will be an inclusive fee covering tuition, student interests and laboratory.)

Extramural Fees

Fees may be paid in two equal instalments, in which case an additional \$1.00 is added to the first instalment. Students registering in September must pay the first instalment by September 17, the balance on or before December 1. Students registering in April must pay the first instalment by April 15 and the balance on or before July 2. A fee of \$3.00 is charged if the payment of the second instalment is later than the date indicated.

Special charges:

Fee for Auditing classes	\$10.00
Fee for late registration and late application for examination	3.00
Change of work after registration	2.00
Registration fee (payable only by non-registered students applying for examinations in courses already passed)	10.00
Establishment of new examination centre	10.00
Fee for each supplemental examination	10.00

Graduation

Bachelor of Arts	10.00
Bachelor of Commerce	10.00
Extra fee for degree <i>in absentia</i>	10.00
Late application for graduation	3.00

Extramural students who enter as intramural students during the winter session may have their extramural fees applied on intramural charges.

Under special circumstances, refunds may be made. Application for a refund must be filed within twelve months of registration. Deductions will be charged for exercises which have been submitted and graded, in addition to an administrative fee of five dollars.

Funds must be remitted by accepted cheque, postal order or bank draft payable to Queen's University. Cheques or bank drafts on any point where there is a branch of the Bank of Montreal are received at par; all other cheques should have $\frac{1}{8}$ of 1 per cent, minimum 15c added to cover exchange, or should be drawn plus exchange.

Extramural and Summer School Courses

Extramural Courses, Summer of 1957 and Winter of 1958

Summer Extramural		Winter Extramural
1,2	LATIN	1,2
A,1,2	GREEK	A,1,2
4	ANCIENT HISTORY	4
1	CLASSICAL LITERATURE	1
2	DRAMA	2
1,2*,3*	ENGLISH	1,2,3
1*,2*	FRENCH	1,2
A,1,2	GERMAN	A,1,2,10
A*,1,2*,6	SPANISH	A,1,2,6,10
3,6*	HISTORY	3,6
4	ECONOMICS	4
2*	POLITICS	2
63	COMMERCE	63
1*,3,7	PHILOSOPHY	1,7
3*	PHYSICS	
2*,3,4,6*,8	PSYCHOLOGY	2,3,4,6,8
1,2*	MATHEMATICS	1,2,3a,7b,10,12
2	RELIGION	2

* Courses offered at the Summer School as well as by correspondence are marked with an asterisk.

Summer School Courses, 1957 - 1961

	1957	1958	1959	1960	1961
ART	1	2	3	1	2
ASTRONOMY	1	—	1	—	1
BIOLOGY	1,2	1,3,19*	1,2	1,3,19*	1,2
CHEMISTRY	2	—	2	—	2
DRAMA	1*	3*	1*	2*	1*
ECONOMICS	—	—	4*	—	—
ENGLISH	2*,3,19*	2*,7*,15*	2*,5,20*	2*,3,10*	2*,7*,19*
FRENCH	1,2	1,3	1,2	1,3	1,2
GEOLOGY	1	1	1	1	1
GEOGRAPHY	1,2*	1	1,2*	1	1,2*
HISTORY	6,16*	5,7*	3,13*	5,16*	3,13*
MATHEMATICS	2*,13*	2*	2*	2*	2*
MUSIC	1*	2*	3*	1*	2*
PHILOSOPHY	1*	1*,7*	1*,3*	1*,7*	1*,3*
PHYSICS	3*	—	—	—	—
POLITICS	2*	—	—	2*	—
PSYCHOLOGY	2,6	4,3,8	2,6	4,3,8	2,6
RELIGION	5	4	3	5	4
SOCIOLOGY	—	1*	—	—	1*
SPANISH	A,2	A,6	A,1	A,2	A,6

* Courses given two hours a day in Summer School, without preliminary exercises.

Fees

The Board of Trustees reserves the right to make changes without notice in the published scale of fees if, in their opinion, circumstances so require. Students who enter with Grade XIII (Senior Matriculation) standing or its equivalent, and proceed to the Honours degree, shall pay in aggregate not less than the full sessional fees for four years. Students on the three-year General Course who enter with the above standing shall pay in aggregate not less than the full sessional fees for the three years.

Fees for the session are payable on or before 1 September. Students required to write supplemental examinations are not exempt from this regulation. A student is not registered and may not attend classes until the required fees have been paid or arranged for with the Treasurer.

The fees must be paid in cash or remitted by cheque, postal order, or bank draft payable to QUEEN'S UNIVERSITY. Cheques or bank drafts on any point where there is a branch of the Bank of Montreal are received at par; all other cheques should have 1/8 of 1 per cent, minimum 15c, added to cover exchange, or should be drawn *plus* exchange.

Sessional fee—including registration, tuition, library, laboratory, examinations, degree

Faculty of Arts, all years	\$330.00
School of Commerce—first and second years	330.00
third and fourth years	350.00
Combined Course in Arts and Physical and Health Education, first, second, and third years	365.00
final year	375.00

<i>Fee for Student Interests</i> —including health insurance, union, faculty societies, Alma Mater Society, Journal, athletics (the athletic fee which is part of the student interests gives admission to all home games except playoffs)	\$ 44.80
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The fees may be paid in two instalments, in which case the first instalment, payable on or before 1 September, is made up of one-half the sessional fee plus the fee for Student Interests plus an administrative charge of \$5.00. The second instalment must be paid on, or before, January 15 in the second term.

The receipted fee sheet is the admission card to the Registration Hall.

A receipt for the fees paid will be returned to the student if a self-addressed envelope is enclosed with the cheque. Otherwise the receipt may be obtained at the Accountant's Office, Richardson Hall (Administration Building) at the time of registration.

Late payment of fees—Previously registered students who fail to pay the prescribed fees by 1 September are charged an additional fee of \$1.00 per day up until the day on which payment is completed, to a maximum of \$10.00. The same charges apply to second instalments.

Late registration—Students presenting themselves after the day set aside for their registration will pay in addition to the regular fees, \$5.00 for the first day and \$3.00 a day thereafter up until the tenth day after the opening of the session.

Refund of fees—If, after paying the fees, a student finds it impossible to attend the University, a full refund is made. Students withdrawing within two weeks after the opening of the session are refunded the tuition fee paid less an administrative charge of \$5.00. Students withdrawing after that time are charged one-seventh of the total tuition for each month of attendance. Students withdrawing at the beginning of a month or at any time within a month are charged for the whole month. No refund is made on the fee for Student Interests, except the health insurance, to a student who attends any part of the session.

Special charges payable as they are incurred

Fee for single lecture course	\$70.00
Fee for Reading Course	\$40.00
Late registration, minimum	\$5.00
Late application for examination or graduation	\$3.00
Change of course after registration	\$2.00
Special examinations given at the University	
One examination	\$10.00
Two or more examinations	\$20.00
Supplemental examinations, each paper	\$10.00
Rereading of examination papers (Regulation 24)	\$10.00
Students not paying full fees, each course	\$70.00
(Fee for Student Interests as above)	
Degree <i>in absentia</i> , extra fee	\$10.00

Year fees. A year fee, ordinarily not more than \$2, is collected by the year societies shortly after the opening of the session.

GRADUATE FEES

Master of Arts, Master of Commerce

Sessional fee	\$250.00
Fee for Student Interests	14.55
(Graduate students may have related privileges on payment of health insurance, \$13.50; athletics, \$15.00.)	
If the work for the Master's Course is spread over two years, the student pays each year	
	\$144.55
Degree fee	20.00
Degree <i>in absentia</i> , extra fee	10.00

Doctor of Philosophy

Sessional fee, annual fee for two years	\$250.00
Fee for Student Interests, as above	
Degree fee	50.00
Degree <i>in absentia</i> , extra fee	10.00

EXTRAMURAL AND SUMMER SCHOOL FEE

An inclusive fee covering registration, tutorial work, Summer School, examinations (except supplementals), library, the MacClement Scholarship contribution and membership in the Summer School association.

Each whole course taken extramurally or by extramural and Summer School work	\$50.00
Each half course	25.00
Each two-hour class taken at the Summer School	60.00
Special charges, as above	

Fees may be paid in two equal instalments, in which case an additional \$1 is added to the first instalment. Students registering in September must pay the first instalment by 17 September, the balance on or before 1 December. Students registering in April must pay the first instalment by 15 April, the balance on or before 2 July.

SCHOLARSHIPS

Scholarships up to a total value of \$1000 are payable on the day of registration. Scholarship winners may obtain their cheques at the Accountant's Office in Richardson Hall (Administration Building) on presentation of their RECEIPTED FEE SHEETS.

Scholarships greater in value than \$1000 are payable in two instalments, the first on the day of registration, the second at the opening of the second term in January. The first instalment will be \$1000 or, if it is greater, the full amount of the sessional fee plus half the balance of the Scholarship money.

Scholarships, Prizes and Medals

MATRICULATION SCHOLARSHIPS

For a list of Matriculation Scholarships and the conditions of award see the publication entitled *Entrance and Matriculation Scholarships*.

Scholarships Awarded in the Faculty of Arts

Scholarship awards are governed by the following regulations:

1. Scholarships may be held only by students in attendance in the Faculty of Arts in the year following the award.
2. Scholarships are not ordinarily awarded to students who make lower than first class standing.
3. A student may not hold more than \$1200 in Faculty scholarship money in any one year.
4. In any year in which a scholarship cannot be given under the normal terms of award, the Department concerned may make special recommendation to the Faculty.

BIOLOGY

W. T. MacClement Memorial Scholarship in Biology 1. Given by graduates in memory of WILLIAM THOMAS MACCLEMENT, formerly the John Roberts Allan Professor of Biology at Queen's University at Kingston.

Value \$40. Awarded annually to the student making the highest standing in BIOLOGY 1.

Ann Eliza Stafford Scholarship in Biology. Given by T. T. BOWER, M.B.E., of Winnipeg, Manitoba, in memory of his mother, ANN ELIZA STAFFORD (1847-1888) of Lyndhurst, Ontario.

Value \$40. Awarded annually to the student making the second highest standing in BIOLOGY 1.

Carling Conservation Club Scholarship. Given by CARLING BREWERIES LIMITED.

Value \$500. Awarded annually to the student standing highest in the penultimate year of the Honours Course in Biology.

W. W. Near Scholarship in Biology. Founded by the late W. W. NEAR, Esq., of Toronto.

Value \$200. Awarded by recommendation of the Department on the basis of the first year's work in Honours in the Department (i.e., the first year after admission to Honours) to a candidate for Honours (major) in

Scholarships: Chemistry

Biology. The holder of this scholarship is paid \$100 in each of two succeeding years. The second payment may be withheld, on recommendation of the Department, if the holder's progress is not satisfactory.

Gowan Foundation No. II. Founded by the late Sir JAMES R. GOWAN, K.C.M.G.

Value \$22. Awarded for the best collection of Canadian Ferns and Fern Allies. The plants must be good specimens, well pressed and mounted on herbarium sheets of the standard size. The collection must be delivered before 15 December.

William I. Chisholm Scholarship in Biology. Founded by REGINA CHISHOLM in memory of WILLIAM I. CHISHOLM.

Value \$200. Awarded on the recommendation of the Department on the basis of the work of the first year to a candidate for Honours (Major) in Biology.

See also the *W. T. MacClement Prize in Biology I* given at the Summer School, page 83.

CHEMISTRY

William Moffat Scholarship. Founded by Dr WILLIAM MOFFAT of Utica.

Value \$20. Awarded annually to the student making the highest standing in first year Chemistry.

Dr William H. Nichols Scholarship in Chemistry. Founded by Dr WILLIAM H. NICHOLS.

Value \$40. Awarded annually to the student obtaining the highest marks in CHEMISTRY 2.

Susan Near Scholarship in Chemistry. Founded by the late SUSAN NEAR of Toronto.

Two scholarships of the value of \$100 and \$50 to be awarded to the students with the highest and second highest standing in any two of CHEMISTRY 11, 12 and 13 taken concurrently, provided that the average obtained in each case on the two subjects is at least 75 per cent.

Solomon Lieff Prize in Physical Chemistry. Established in memory of the late SOLOMON LIEFF, Arts '46, by Mr and Mrs I. LIEFF and the B'nai B'rith Hillel Foundation of Queen's University.

Value \$10.47 in books. Awarded annually to the student making the highest standing in CHEMISTRY 14.

Chemical Institute of Canada Scholarships. Given by the Chemical Institute of Canada.

Two scholarships of the value of \$25 each. One scholarship is awarded to the student in third year Chemical Engineering who obtains the highest standing on the work of the year and the other to the student either in

third year Chemistry in the Faculty of Applied Science or in the penultimate year of the Honours Course in Chemistry in the Faculty of Arts, who obtains the highest standing on the work of his year.

A. C. Neish Prizes. Established by the Kingston Section of the Chemical Institute of Canada as a memorial to Professor A. C. NEISH, a former head of the Department of Chemistry at Queen's University and Past President of the Chemical Institute of Canada.

Two book prizes of \$15 and \$10. The prizes are awarded annually to students in Chemistry or Chemical Engineering for the best essays or reports on topics in their special fields. The students presenting the best five essays are asked to give their papers before the Kingston Section of the Chemical Institute of Canada and the prize winners are selected from this group. The names of all winners are engraved on a plaque which hangs in Gordon Hall.

Prize of the Society of Chemical Industry. Offered by the Society of Chemical Industry.

Value \$25. Awarded to the undergraduate student in any branch of Chemistry who presents a paper on a chemical subject. The paper may be based on original laboratory or original plant work, critical study of plants and plant operations or chemical processes, critical study of laboratory procedures, or any other chemical subject involving originality. Submissions must be typewritten on one side of the paper and may be of any length, but 3,000 or 4,000 words are suggested as suitable. They may be written in English or in French.

CLASSICS

Frederica McCulloch Scholarships in Latin. Founded by the late ANDREW McCULLOCH, M.A., of Thorold.

1. Value \$60. Awarded to the student who has the highest standing on the April examination in LATIN 1.

2. Value \$80. Awarded to the student who has the highest standing on the April examination in LATIN 2.

3. Value \$60. Awarded to the student who has the second highest standing on the April examination in LATIN 2.

4. Value \$120. Normally awarded at the end of the first year of Honours on the standing obtained thus far in Latin courses taken at the University.*

* These scholarships are intended to recognize outstanding promise in Honours work. If conditions warrant, they may be awarded at other stages than those prescribed here.

Scholarships: English

5. Value \$80. Normally awarded at the end of the first year of Honours on the standing obtained thus far in Latin courses taken at the University.*

W. W. Near Scholarships in Classics. Founded by the late W. W. NEAR, Esq., of Toronto.

1. Value \$100. Normally awarded at the end of the second year of Honours, chiefly on the standing obtained in courses of the Department of Classics. When candidates are of nearly equal merit, some preference will be given those who are taking Greek.*

2. Value \$50. Awarded to the student who has the highest standing on the April examination in ANCIENT HISTORY 4.

3. Value \$50. Awarded to the student who has the highest standing on the April examination in CLASSICAL LITERATURE 1.

Scholarships in Greek. The Maclellan Prize. Founded by the late Hon. JAMES MACLENNAN, LL.D., of Toronto; value \$20.

Flossie May Bogart Scholarship. Founded by the late Mrs. I. G. BOGART of Kingston in honour of FLOSSIE MAY BOGART; value \$80.

*These awards are made to students of outstanding ability and promise in GREEK A or GREEK 1 or GREEK 2. When GREEK A and GREEK 1 are taken in the winter and the following summer they will (for purposes of these awards) be considered as together forming one course. It will therefore sometimes be necessary to withhold announcement of these scholarships until the results of August examinations are known.

COMMERCE

For Scholarships in Commerce, see POLITICAL AND ECONOMIC SCIENCE, page 62.

ECONOMICS

For Scholarships in Economics, see POLITICAL AND ECONOMIC SCIENCE, page 62.

ENGLISH

Alexander Laird Scholarship in ENGLISH 2. Founded in memory of the late Rev. ALEXANDER LAIRD by his brothers and sisters. Awarded annually to the student who makes the highest marks in ENGLISH 2; value \$50.

James Cappon Memorial Scholarship in ENGLISH 2. Founded by Miss ALICE L. MACNEE of Kingston in memory of Dr JAMES CAPPON, formerly Head of the Department of English and Dean of the Faculty of Arts.

Value \$40. Awarded to the student standing second in ENGLISH 2.

Special Prize for Highest Standing in Extramural ENGLISH 2.

Value \$25. Given by a graduate to the extramural candidate for degree who makes the highest standing in ENGLISH 2, provided that the candidate proceeds with university work the following year.

Roberta McCulloch Scholarships in English. Founded by the late ANDREW McCULLOCH, M.A., of Thorold.

1. Value \$30. Awarded annually to the student standing third in ENGLISH 2 (intramural).

2. Value \$50. Awarded annually to the student standing highest in Grade A, ENGLISH 3.

3. Value \$50. Awarded annually to the student standing highest in Grade A, ENGLISH 7.

4. Value \$40. Awarded to the student having the highest standing in ENGLISH 10.

5. Value \$100. Awarded annually to the Honours student who having English as the major subject, stands highest in Grade A, in the final year examinations, provided that the student is proceeding to graduate work in Queen's University or another university. If no candidate fulfils these requirements, this scholarship may be awarded to a student entering the final year of Honours.

McIver Scholarships. Founded by J. B. McIVER, formerly Treasurer of Queen's University.

1. Value \$50. Awarded to the student having the highest standing in ENGLISH 5 who plans to proceed to further work in English.

2. Value \$50. Awarded to the student having the highest standing in ENGLISH 14a and 14b.

3. Value \$50. Awarded to the student having the highest standing in ENGLISH 15.

4. Value \$50. Awarded to the student having the highest standing in ENGLISH 19.

Mary Mewkill Memorial Scholarship in English. Given by Miss MARY MEWKILL of Poughkeepsie, New York, in grateful remembrance of her teachers and associates at Queen's University.

Value \$70. Awarded annually to the most outstanding student in the course in English covering the period from 1780 to 1830, taught for many years by Professor JAMES A. ROY.

Scholarships: French

'01 Fellowship in English. Established by the class which graduated in 1901.

Value \$80. Awarded to a student who will act as tutor in English during the following session.

McIlquham Foundation in English. Founded by the parents of Mr J. MAX MCILQUHAM, a student at Queen's University, 1912-15, who was killed on service overseas.

Value \$20. Awarded for the best original poem, short story, or play.

Competitive papers must be submitted to the Registrar by 1 April. Each paper must bear a motto instead of the author's name, and must have attached to it a sealed envelope, bearing the same motto and containing a signed declaration that it is his unaided composition. All successful compositions are the property of the University, and are at the disposal of the Senate.

Wilhelmina Gordon Foundation in English. Established by the Imperial Order, Daughters of the Empire, in appreciation of the work of Professor WILHELMINA GORDON, who served as National Educational Secretary from 1923 to 1937.

Value \$125. Awarded to the Honours student in English standing highest in Class I in the final year examinations, provided that the student is proceeding to graduate work.

See also the *W. T. MacClement Prize*, the *McNeill Prize*, and the *Tracy Prize*, page 85.

FRENCH

W. W. Near Scholarships in French. Founded by the late W. W. Near, Esq., of Toronto.

1. Value \$100. Awarded to the student who has the highest standing in FRENCH 2.

2. Value \$100. Awarded to the student making the highest standing in the first year of Honours work.

Ottawa B'nai B'rith Scholarship in French.

Value \$100. Awarded to the student making the highest standing in the second year of Honours work in French.

Sir Wilfrid Laurier Memorial Scholarship. Founded by the Ontario Women's Liberal Association to perpetuate the memory of Sir WILFRID LAURIER.

Value \$80. Awarded for proficiency in French conversation. Candidates must be Canadian-born English-speaking students, sons or daughters of a British subject by birth or naturalization, not of French parentage and resident in Ontario. The examination is held in March of each year.

See also the *Edgar Forrester Scholarship in Oral French*, page 85.

Scholarships: Geological Sciences

GEOLOGICAL SCIENCES

Manley B. Baker Scholarships in Geology. Founded by AGNES MORELAND BAKER.

Two scholarships of the value of \$125 and \$75 are awarded annually to the students in the Faculty of Arts or Applied Science obtaining highest and second highest standing in the first three courses in Geology—that is GEOLOGY 1, 2 and 11 or GEOLOGY 1, 2 and 12. These scholarships are open only to students proceeding in Honours Geology in Arts or in the Course in Geological Sciences in Applied Science. If two students are equal, preference will be given to the one whose need is greater.

Susan Near Scholarship in Geology.

Value \$100. Awarded to the students making the highest standing in GEOLOGY 11, 12 and 14.

J. P. Bickell Foundation Scholarships.

Four Scholarships of a total value of \$1,200 each for award to deserving students who have attained first class honours standing on the final examinations of the first year of the Courses in Geological Sciences and Mining in the Faculty of Applied Science and the Course in Geological Sciences in the Faculty of Arts. The Scholarships shall be payable over a period of three years. The first payment of \$600 shall be paid in two instalments,—\$300 immediately after registration in the second year and \$300 at the beginning of the second term of that year; \$400 and \$200 immediately after registration in the third and fourth years respectively provided that the student has maintained first class honours in the final examinations of the second and third years of the Courses in Geological Sciences or Mining. If in any year the student fails to make first class honours he shall forfeit the Scholarship which may be awarded by reversion to another student who has the required standing on the approved Courses.

A J. P. Bickell Foundation Scholarship may not be held along with another Scholarship, nor may it be retained by a student transferring to any Course other than Geological Sciences or Mining. If, in any year, an award is not made, the amount not used may be awarded in the following year.

Application for a J. P. Bickell Foundation Scholarship should be made to the Registrar by 1 March.

The Thayer Lindsley Scholarships in Geological Sciences

Two scholarships of \$400 each for students completing their *first* year in a Course leading to a degree in Geology in either Arts or Applied Science.

Scholarships: German—Hebrew

Two scholarships of \$300 each for students completing their *second* year in the above Courses. All awards are based on academic standing.

See also the *California Standard Company Scholarships*, page 62, and the *Wallace Prize*, page 85.

GERMAN

In any year in which one or more of these scholarships cannot be awarded under the following conditions, the Department may make a special recommendation to the Faculty.

W. W. Near Scholarships in German. Founded by the late W. W. NEAR, Esq., of Toronto.

1. Value \$50. Awarded to the student who obtains the highest standing in GERMAN 2.

2. Value \$50. Awarded to the student who obtains the highest standing in GERMAN 10.

Susan Near Scholarship in German. Founded by the late SUSAN NEAR of Toronto.

Value \$50. Awarded to the student who obtains the highest standing in any full course, or two half-courses, in Honours German other than GERMAN 10.

German Student Exchange Scholarship

Each year an exchange is arranged between Queen's University and the German Academic Exchange Bureau in Bonn. Under this arrangement a student from West Germany is given free tuition and health insurance and a grant of \$750 by Queen's University. In return a student from Queen's University is awarded a scholarship of 4200DM, approximately \$1000, by the Academic Exchange Bureau, and is entitled to free tuition at any University in West Germany as well as to second class return fare from the German frontier to the university centre.

More detailed information about the German scholarship, which is open to students of all faculties, may be obtained from the Head of the Department of German. Application should be made to the Department of German by February 1.

GREEK

For Scholarships in Greek, see CLASSICS, page 53.

HEBREW

Harry Abramsky Scholarship in Hebrew.

Value \$65. Awarded annually to the student who obtains the highest standing in HEBREW 1.

Mary Fraser McLennan Prize in Hebrew. Founded in memory of MARY FRASER MCLENNAN, of Lancaster, by her sons.

Value \$12. Awarded to the student obtaining the highest standing in HEBREW 2.

HISTORY

Andrew Haydon Scholarship in Colonial History. Founded by Senator ANDREW HAYDON, M.A. '93, LL.B.

Value \$40. Awarded to the student with the highest standing in HISTORY 3.

Susan Near Scholarships in History. Founded by the late SUSAN NEAR of Toronto.

Two scholarships of the value of \$80 and \$70 respectively. Awarded to the students who, offering History as their major subject, obtain the highest and second highest standing in History at the end of the first session after admission to Honours.

Arts '09 Scholarship in History. Founded by the class of 1909.

Present value \$75. Awarded annually to the Honours student in History with the highest standing in History courses taken in the penultimate year.

Arts '15 Prize. Founded as a memorial by the class of 1915.

Value \$40. Awarded annually in turn by the Department of English, Mathematics, and History to the student with the highest standing in two Honours courses taken in the third year. Awarded in History in 1958, in English in 1959, and in Mathematics in 1960.

The W. B. Munro Scholarship in History. Founded by the class of Arts '96 in memory of Dr W. B. MUNRO.

Value in 1957-58, \$50. Awarded to the student who, in the view of the Department of History, is the most eligible of the candidates applying for admission to Honours work.

A. R. M. Lower Prize in History.

Given annually by Professor A. R. M. LOWER to the student standing first in HISTORY 3. The purpose of the prize is to help students interested in History, especially Canadian History, in beginning libraries of their own.

Scholarships: Mathematics

Thomas M. Walsh, M.A., Memorial Prize in History. Established by W. G. McNEIL, B.A. '13, and J. F. C. WHALLEY, B.A. '13, in memory of their classmate, THOMAS M. WALSH, M.A. '13.

Value \$10. Awarded annually to the student who has the highest standing in the penultimate year of the Honours Course in History. In determining the award essays that have been prescribed during the session will be taken into account.

See also the *W. T. MacClement Prize* in HISTORY 3 given at the Summer School, page 85.

LATIN

For Scholarships in Latin, see CLASSICS, page 53.

MATHEMATICS

N. F. Dupuis Scholarship in Mathematics. This is one of three scholarships founded by the graduates of the University in honour of the late Professor N. F. DUPUIS on the completion of his forty-five years' service as professor in the University.

Value \$50. Awarded to the student who makes the highest standing in MATHEMATICS 1 in the April examinations.

E. D. Merkley Prize in MATHEMATICS 2. Founded in memory of E. D. MERKLEY, B.A., a graduate of 1926.

A prize of the value of \$5 in books. Awarded each year to the student obtaining the highest standing in MATHEMATICS 2.

The Edna McGill Scholarship in Mathematics. Established in memory of Mrs EDNA MCGILL HAMBLY.

Value \$100. Awarded to the student proceeding from the second to the third year of the Honours Course in Mathematics and Physics who obtains the highest first-class standing in the courses in Mathematics and an overall average of first class.

Susan Near Scholarships in Mathematics. Founded by the late SUSAN NEAR of Toronto.

Two scholarships of the value of \$60 and \$40. Awarded to the students with the highest and second highest standing in MATHEMATICS 2 and 10 taken concurrently.

Two scholarships of the value of \$60 and \$40. Awarded to the students with the highest and second highest standing in MATHEMATICS 12 and 13 taken concurrently.

See also the *Day Scholarship in Physics and Mathematics*, page 61, the *California Standard Company Scholarships*, page 62, and the *Matheson Prize*, page 85.

Scholarships: Philosophy—Physics

PHILOSOPHY

The John Stark Gillies Scholarships in Philosophy.

1. Value \$100. Awarded annually to a student in Philosophy on the result of the year's work in PHILOSOPHY 1.

2. Value \$100. Awarded annually to the student making the highest standing on Honours work in Philosophy.

See also the *W. T. MacClement Prize* in PHILOSOPHY 1 given at the Summer School, page 85.

PHYSICS

The Edna McGill Scholarship in Physics. Established in memory of Mrs. EDNA MCGILL HAMBLY.

Value \$100. Awarded annually to the student taking Physics as Major and Mathematics as Minor who has the highest first class standing in courses in Physics and not less than second class standing in the courses in Mathematics taken in the academic session immediately prior to the penultimate year.

William Coombs Baker Memorial Prize. This prize has been founded by graduates in memory of WILLIAM COOMBS BAKER, formerly the Robert Waddell Professor of Experimental Physics at Queen's University.

A prize of the value of about \$22 in books selected from a list approved by the Department of Physics. Awarded annually to the student making the highest standing in PHYSICS 11.

Day Scholarship in Physics and Mathematics. Founded in memory of the late CALVIN WELLINGTON DAY, M.A., Lieutenant 2nd Battalion, C.E.F.

Value \$20. Awarded to students proceeding to the Honours Course in Physics and Mathematics, the award to be based on examinations in PHYSICS 2 and the Mathematics taken in the same year, provided that at least one full course in Mathematics other than MATHEMATICS 1 is being taken.

Susan Near Scholarships in Physics. Founded by the late SUSAN NEAR of Toronto.

1. Value \$50. Awarded to the student who has the highest standing in PHYSICS 2 and PHYSICS 11 at the end of the session in which PHYSICS 11 is completed. PHYSICS 2 need not be taken concurrently with PHYSICS 11.

2. Value \$75. Awarded to the student who has the highest standing in PHYSICS 14A and PHYSICS 13B taken concurrently.

3. Value \$75. Awarded to the student who has the highest standing in PHYSICS 10A and PHYSICS 12B taken concurrently.

Scholarships: Political and Economic Science

California Standard Company Scholarships

The California Standard Company has established three scholarships of \$375 each, two for award to outstanding students in the penultimate year of the Courses in (a) Geological Sciences and (b) Mining, Chemical, Civil or Mechanical Engineering; one for award to an outstanding student in the second year of the Courses in Geophysics or related Physics, Mathematics or Electrical Engineering. In making the award, consideration will be given not only to scholarship, potential ability for research, character and personality, but also to interest in problems related to the exploration for and production of oil.

POLITICAL AND ECONOMIC SCIENCE

W. M. O. Lothead Scholarship in Economics. Founded by W. M. O. LOCHEAD, M.A. '98, Kitchener, Ontario.

Value \$40. The scholarship will be awarded to the student making the highest standing in the sessional examinations and classwork in ECONOMICS 4, provided he is in attendance in some faculty of the University during the following session.

Adam Shortt Scholarship in Political Science. Founded by G. W. MASON, Esq., K.C., in honour of Dr ADAM SHORTT, formerly Professor of Economics.

Value \$50. Awarded to the student making the highest standing in POLITICS 2, provided he is in attendance during the following session and is registered in advanced work in the Department of Political and Economic Science.

Chancellor C. A. Dunning Scholarship in Political and Economic Science and Commerce.

Value \$400. Awarded by recommendation of the Department on the basis of the first year's work in Honours (i.e., the first year after admission to Honours) to a candidate for Honours (major) in Economics or Politics, or at the end of the second year's work to candidates for the degree of Bachelor of Commerce. The holder of this scholarship is paid \$200 in each of two succeeding years. The second payment may be withheld, on the recommendation of the Department, if the holder's progress is not satisfactory.

W. W. Near Scholarship in Political and Economic Science. Founded by the late W. W. NEAR, Esq., of Toronto.

Value \$200. Awarded by recommendation of the Department on the basis of the first year's work in Honours (i.e., the first year after admission to Honours) to a candidate for Honours (major) in Economics

Scholarships: Political and Economic Science

or Politics. The holder of the scholarship is paid \$100 in each of two succeeding years. The second payment may be withheld, on the recommendation of the Department, if the holder's progress is not satisfactory.

George and Mary Louise Patton Memorial Scholarship. Founded by the late GEORGE PATTON in memory of his wife MARY LOUISE PATTON, and himself.

Value \$100. Awarded by recommendation of the Department of Political and Economic Science on the basis of the first year's work in Honours, (i.e., the first year after admission to Honours), to the candidate for Honours in Economics or Politics who makes the second highest standing.

Gowan Foundation No. 1. Founded by the late Sir JAMES R. GOWAN, K.C.M.G.

Value \$25. Awarded for the best essay written under examination conditions in February of each year, on one of a list of subjects prescribed by the Department of Political and Economic Science.

Gowan Foundation No. III. Founded by the late Sir JAMES R. GOWAN, K.C.M.G.

Value \$25 in books. Awarded in Honours in Political Science.

Harry Abramsky Scholarship. Given by HARRY ABRAMSKY, Kingston, Ontario.

Value \$60. Awarded to a final year student in the School of Commerce and Administration on the basis of standing on the previous year's work.

Clarkson Prize in Accounting. The gift of CLARKSON, GORDON & COMPANY.

Value \$50. Awarded on the recommendation of the staff of the School of Commerce and Administration to the graduating student who has taken the optional courses in the accounting field and whose work on these courses and on the compulsory courses in the same field has been outstanding.

Arthur Hillmer Memorial Prize. Established and maintained by CAMERON C. HILLMER, Commerce '36, Oakville, Ontario.

A prize of the value of approximately \$10 in books. Awarded annually at the Spring Convocation to the final year student who, in the opinion of the Commerce staff, has done the best work in COMMERCE 52.

C. F. J. Finlay Memorial Prize. Established and maintained by CAMERON C. HILLMER, Commerce '36, Oakville, Ontario.

A prize of the value of approximately \$10 in books. Awarded annually at the Spring Convocation to the final year student who, in the opinion of the Commerce staff, has done the best work in COMMERCE 54.

Scholarships: Psychology

Sir James Dunn Scholarship in Commerce.

Value \$1000. To be awarded on the recommendation of the Director of the School of Commerce and Administration and the Head of the Department of Political and Economic Science to a student in the School of Commerce who is qualified to enter the second year of the Course on the basis of his academic standing and aptitude for a business career. The scholarship shall be payable over a period of three years: \$400 at the beginning of the second year, \$300 at the beginning of each of the third and fourth years. The student must maintain satisfactory standing from year to year in order to retain the scholarship. In the event of a student **not** doing satisfactory work, the scholarship may revert to another student.

Price Waterhouse and Co. Scholarship. Value \$250. Founded by PRICE WATERHOUSE AND CO.

Awarded to a student in the Course in Commerce and Administration who has completed the work of the third year, is within one year of graduation, and has gained distinction in his academic work. The award is conditional on the winner having taken the optional accounting courses of the third year.

The recipient is selected on the recommendation of a Committee of Award consisting of the Principal of the University, the Director of the School of Commerce and Administration, and the Registrar.

The Clarkson Gordon & Co. Research Assistantship.

Value \$250. Awarded to a student electing the optional course in Accounting at the end of the second or third year of the Commerce Course. To be made on the recommendation of the Director of the School of Commerce and Administration, consideration being given to character, industry and the general academic record of the student. During the tenure of this award, the holder will be required to assist one or more members of the accounting staff with research being conducted by them. (This award is not available to a fourth year student for assistance in a research project that is the subject of his thesis in Commerce 59).

Riddell, Stead, Graham and Hutchison Service Award.

Awarded to a student completing the third year of the Course leading to the degree of Bachelor of Commerce who is proceeding to the fourth year and who intends on graduation to enter articles with a practising firm of chartered accountants. The award will be made by the Director to a student whose personality, ability, academic record and other characteristics are, in the opinion of the Director, those needed by a chartered accountant.

General Scholarships

Industrial Relations Prize No. 1.

Value \$60. A prize of the value of \$60 to be awarded each year to the student making the highest standing in COMMERCE 50.

PSYCHOLOGY

Susan Near Scholarship in Psychology. Founded by the late SUSAN NEAR of Toronto.

Value \$100. Awarded to the student making the highest standing in PSYCHOLOGY 2.

Ann Adamson Scholarships in Psychology. Founded by Mr. and Mrs. J. F. ADAMSON in memory of ANN ADAMSON of Stratford, Ontario.

1. Value \$150. Awarded by recommendation of the Department to a candidate entering the third year of work in Honours Psychology (major).

2. Value \$300. Awarded by recommendation of the Department to a candidate entering the final year of work in Honours Psychology (major).

SPANISH

W. W. Near Scholarships in Spanish. Founded by the late W. W. NEAR, Esq., of Toronto.

1. Value \$50. Awarded to the student who has the highest standing in SPANISH 1.

2. Value \$50. Awarded to the student who has the highest standing in SPANISH 6 or SPANISH 10.

Susan Near Scholarship in Spanish. Founded by the late SUSAN NEAR of Toronto.

Value \$50. Awarded to the student who has the highest standing in SPANISH 2 provided that that standing is Grade A.

General Scholarships

University Scholarships

University Scholarships have been set up for award to students in both Specialized and General Honours Courses with distribution normally as follows. If, however, there are a greater number of candidates in one group than in another, the Scholarship Committee may adjust the distribution as they deem wise.

1. (a) Ten Scholarships of \$600 each for award to the students standing highest in the penultimate year. In no case will an award be made to a student standing second in a Department.

General Scholarships

- (b) Fifteen Scholarships of \$200 each for award to the students standing second in the penultimate year.
2. Ten Scholarships of \$300 each for award at the end of the first year of Honours.
 3. Nine Scholarships of \$200 each for award on entrance to Honours. One of these scholarships shall be known as the *Lila Wilson Scholarship* and shall be given in the Department of English.
 4. \$2500 in Bursary money for award to able students, special consideration being given to students on the General Honours Course with a concentration of five courses in one subject, four in another, who might be encouraged to take the Master's Degree in two years.

Reuben Wells Leonard Penultimate Year Scholarships.

One scholarship of the value of \$450 and one of the value of \$300. Awarded at the end of the penultimate year to students obtaining highest and second highest standing in the Faculty of Arts. The winning students must be in residence the year following the award.

Eliza Fitzgerald Scholarship. Given by Dr GENEVA MISENER, Arts '99 and the General Alumnae Association of Queen's University in acknowledgment of the contribution made to Secondary School Education in Ontario by Miss ELIZA FITZGERALD, Arts '84, one of the first women graduates of Queen's University.

Value \$100. Awarded at the end of the penultimate year to the woman student making the highest standing in Honours.

Aluminum Company of Canada, Ltd. Scholarship.

This Scholarship is of a total value of \$600 per year, with \$400 for the student and \$200 for the University. The amount allotted to the student may be changed at the discretion of the University authorities if they consider it advisable. The Scholarship shall be awarded on a yearly basis and shall be tenable by students in the penultimate or final year of Courses in the Faculties of Arts and Applied Science who are registered in Courses of interest to the Aluminum Company of Canada. In the Faculty of Arts the Scholarship shall be open only to students in Honours Courses in Physics, Chemistry, Geological Sciences, Economics and Commerce. A student holding the Scholarship in the penultimate year shall have the privilege of reapplying for it in the following year and shall be considered with other candidates. The winner shall be in no way bound to enter the donors' employment, nor shall the donors

General Scholarships

be committed in any way to finding employment for the student after graduation.

Robert Bruce Scholarship. Under provisions in the will of ROBERT BRUCE of Quebec, the University has established a scholarship in each of the Faculties of Arts, Applied Science and Medicine.

Value \$100. The scholarship is awarded at the end of the first year to the student who has the highest standing on the regular examinations of that year. One third of the value of each scholarship is paid to the winner in each of the second, third and fourth years of his Course, provided that he is in full attendance in the Faculty in which the award was made.

Andrina McCulloch Prizes for Public Speaking. These prizes are awarded annually for the promotion and encouragement of public speaking in the University.

Drama. Two prizes are awarded as a result of an audience poll at two main productions of the Queen's Drama Guild.

Presentation of Thesis Material. All graduate students are invited to deliver a ten-minute talk on their thesis subject to a panel of judges drawn from the Board of Graduate Studies. Awards are made to the two most lucid speakers.

Arts '50 Scholarship. Given by members of the Class of Arts '50 in sincere appreciation of the benefits received while in course at Queen's University.

Value \$150. Awarded annually to a student entering the final year of the Faculty of Arts who has made a personal contribution to the life of the University and who has maintained at least 66 per cent on the work of the Course.

B'nai B'rith Kingston, Bursary. Founded by the B'nai B'rith Lodge of Kingston.

Value \$50. This Bursary is awarded annually to a student of promising ability but straitened circumstances. The award is made on the basis of the April examinations. Applications are received up until 1 April each year.

C.O.T.C. Prizes: The Hayunga Prize.

The Queen's University Contingent of the Canadian Officers' Training Corps offers five prizes as follows:

Category A

To officer cadets who have completed their first Summer Camp, taken their previous academic year at Queen's University and are active in the Unit.

General Scholarships

Faculty of Arts one prize of \$150

Faculty of Medicine one prize of \$ 50

This is supplemented by the Hayunga Prize of \$100

Faculty of Applied Science one prize of \$150

The awards are made on the basis of interest shown in the work of the unit, reports from Corps Schools and academic standing. The cadet is eligible only if he has had no failures in the previous year and is in some way above average.

Category B

To officer cadets who have completed their second Summer Camp and have taken the previous academic year at Queen's University, one prize of \$150 to the best cadet, and one of \$100 to the runner-up.

The winner in this group is selected on the basis of soldierly qualities and usefulness to the Contingent and on reports from Corps Schools. The cadet is eligible only if he has had no failures in the previous year and is in some way above average.

The Selection Committee shall consist of the officers of the Unit, the R.S.O. and such other members as the Board of Trustees of the Contingent shall see fit to appoint.

In any year in which there are no deserving and eligible candidates the awards will not be made.

Pipe Band Scholarship. Maintained by the Queen's University Pipe Band.

Value \$25. Awarded in Session 1957-8 to the best piper among the first year students in all faculties on the basis of a piping contest.

Robert Bruce Bursaries. The will of the late ROBERT BRUCE of Quebec provided for an annual sum to be given in Bursaries "to students of promising ability but straitened circumstances".

A sum of about \$90 is disbursed annually to one or more students in the third or later years in any Faculty. The Registrar will receive applications up to 1 September in each year.

Khaki University and Y.M.C.A. Memorial Fund. This fund is part of a sum, left from the Khaki University after the First World War, which was divided among the Canadian Universities.

The interest, amounting to \$250, is used to award one or more scholarships to undergraduate students in any faculty. In awarding these scholarships the need as well as the standing of applicants is considered and preference is given to returned men, or sons or daughters of soldiers of the First World War. Applications are received by the Registrar up to 1 March.

Faculty Women's Club of Queen's University Residence Bursary. A Bursary of not less than \$50 given by the Faculty Women's Club of Queen's University to assist a woman student or students in paying residence fees. Application may be made to the Dean of Women or the Registrar.

University Women's Club of Kingston Bursary. Given annually by the University Women's Club of Kingston to assist a woman student of promising ability who is in financial difficulties.

Value \$200. Interested candidates should make application to the Registrar by 31 December.

Leonard Foundation Scholarships.

Leonard Foundation Scholarships are awarded each year to selected students in Universities and Colleges across Canada, including Queen's University. The Trust Deed states: "Preference in the selection of students for Scholarships shall be given to the sons and daughters of the following classes: (a) clergymen; (b) school teachers; (c) officers, non-commissioned officers and men, whether active or retired, who have served in Her Majesty's Military, Naval or Air Forces; (d) graduates of the Royal Military College of Canada; (e) members of the Engineering Institute of Canada; (f) members of the Mining and Metallurgical Institute of Canada."

Applications must be submitted by 1 March. All applicants must be nominated by a member of the General Committee. Mr M. C. Tillotson, the University Treasurer, is a member of the General Committee and application forms may be obtained from his office.

Lilian Coleman Taylor Prize. Value \$80. Awarded annually to the most outstanding woman student from Leeds County registered in any Faculty of Queen's University.

O. M. Montgomery Fund. Established by the Aluminum Company of Canada in memory of Mr O. M. MONTGOMERY who graduated from Queen's University in Electrical Engineering in 1905. This fund is used to provide bursaries for worthy students in need of financial help. It is administered by a Committee consisting of the Principal, the Vice-Principal, the Registrar and a representative of the Aluminum Company. Up until 1954 awards were restricted to students within the University. Henceforth applications will be received also from candidates for admission. Grants up to \$300 may be made to students registered in or applying for admission to any Faculty and will be regarded as gifts at the discretion of the Committee when made to sons or daughters of employees of the Aluminum Company. Otherwise repayment is expected in one or both of

General Scholarships

the following ways: (a) By service to the University if the beneficiary has time and is qualified for work available. Such service shall be assistance in a department or office, or library, or laboratory, or some other comparable employment. (b) By return in cash of the sum granted, or of the part not worked out. In some cases the award is regarded as a loan without interest, payable at some time to be agreed upon.

Ottawa Ladies' College Scholarships. "Ottawa Ladies' College was incorporated by Statute of the Province of Ontario in 1869 at the request of citizens of Ottawa 'for the purpose of establishing and conducting a seminary of learning of a collegiate character for the education of female youth'. Its first President was E. B. EDDY and Secretary, Rev. WILLIAM MOORE. Its building was expropriated for war purposes in 1942 and it then ceased to function for the specific purpose for which it was incorporated. In order that it might use its assets for wider educational purposes its Act of incorporation was amended in 1948 and it has now transferred its funds in trust to Carleton College, Ottawa, and Queen's University at Kingston."

1. Four scholarships of \$100 each to be awarded each year to Protestant lady students from the Ottawa Collegiate Institutes or Technical Schools without restriction as to Course or the year of attendance at Queen's.

2. Five hundred dollars to be used annually to pay one or more Protestant students from Ottawa for assistance to the teaching staff at Queen's University.

Dominion-Provincial Student-Aid Bursaries, Type B.

Applications for Bursaries will be considered from the students who are enrolled in full time courses provided they have an average of 66 per cent on the last series of examinations.

The Student-Aid programme represents a co-operative effort on the part of applicants, their parents and the Ontario and Federal Governments. It is understood that applicants will help to meet the costs of their education by engaging in remunerative employment during the vacation periods and that their parents will contribute in proportion to their means.

Forms of application may be obtained from the Registrar of the University.

General Motors Canadian Scholarship Programme

Queen's University at Kingston has been allotted three Scholarships under the General Motors Canadian Scholarship Programme, ranging in value from an honorary award of \$200 per year to \$2,000 per year.

General Scholarships

The Scholarships are open to students entering any Faculty or School of Queen's University at Kingston, in September 1957. Applicants must be Canadian citizens.

The Scholarships are intended for outstanding students and in determining the amount of the award, need will be taken into account. In making this evaluation, attention will be given to the cost of tuition, board and lodging, books and supplies, incidental college expenses and an allowance for transportation. Capacity to pay will be computed by considering what the student's family may be expected to contribute, how much the student is likely to use each year from the accumulated savings, how much he or she can be expected to earn during the summer and the college session, and other sources of assistance that may be available. The difference between income and expenditure will be the deciding factor in determining the amount of the Scholarship. The Scholarship will be renewed from year to year provided that the student maintains the necessary standing and an examination of need will be made annually so that allowance may be made for any changes in the requirements of the student. Should the holder of the award withdraw or fail to maintain a record in line with the standards established by the University, the Scholarship may be awarded to another qualified student who is a member of the same class.

There will be no obligation on the part of the holder of the award to accept employment with General Motors, nor will there be any responsibility to the individual upon graduation.

Application should be made to Queen's University at Kingston on or before 1 April.

A. E. MacRae Award in Social Engineering, Applied Christian Democracy. Founded by A. E. MacRae of Ottawa.

Value \$245. Awarded annually under the following conditions as stated by the donor.

The object of this prize is to promote on the part of the individual the practice of factually appraising his every act from the point of view of others concerned so that he may make it easiest for them to co-operate in achieving a desired objective. It is based on the idea that maximum social progress primarily demands of education the production of individuals of capacity to lead others in the doing of things which, in the long view are for the continuing good of all. A keen sense of responsibility for the common good, as opposed to the mere temporary benefit of a particular agency, is essential in efficient social leadership.

It is presented annually to the student in attendance at Queen's University who, prior to the beginning of his or her graduating year has

General Scholarships

developed and exhibited the greatest capacity in leading the student body, or any portion of it, in accomplishing purposes which are considered good by the majority of the student body.

The recipient shall be selected by a committee consisting of the presidents of the faculty societies and the Levana Society and the Principal of the University or his nominee.

George Taylor and Lilian Coleman Taylor Bursary.

A limited amount of money from the George Taylor and Lilian Coleman Taylor Fund is available annually for competent but needy students from Leeds County registered in any Faculty of the University. Applications for grants from this fund should be made through the Registrar.

Welch Scholarship. Founded by FREDERICK WELCH of Kingston.

Value \$100. Awarded in the Faculty of Arts and open for competition only to the sons and daughters of non-commissioned officers and men who served overseas in the Great War, and of mechanics and labourers, which students shall at the time be bona fide residents of the City of Kingston, preference being given to the children of soldiers. Application for this scholarship must be made to the Registrar not later than 1 March and must give evidence of eligibility in accordance with the terms of the will. The scholarship is awarded on the basis of the April examinations.

Atkinson Foundation Scholarships.

Scholarships from moneys given by the Atkinson Foundation will be awarded in session 1957-8 on the basis of merit and need. In making the awards the Scholarship Committee will take into account the sincerity and future promise of the candidate.

St Andrews Exchange.

An exchange between the University of St Andrews in Scotland and Queen's University in Kingston is arranged each year. Under this arrangement the University of St Andrews gives exemption from fees and room and board to a student appointed by Queen's University and in return Queen's University gives free tuition and provides board and lodging for a student from St Andrews. In addition, Queen's University gives a cash award of \$200 toward the travelling expenses of the student appointed to St Andrews and the University of St Andrews gives £100 to the student coming to Queen's.

Applications for the exchange scholarship should be submitted to the Registrar of Queen's University by 1 March of the year of award.

Exchange Plan for Undergraduates of Canadian Universities.

The object of the Exchange Plan is to permit specially selected students to take a year of work at a university in another section of the country, provided that such students undertake to return the following year to their own university. Students accepted under the exchange plan will be permitted to take a full year's work at the desired university with exemption from tuition.

Applications for an Exchange Scholarship must be in the hands of the Registrar not later than 1 March.

GRADUATE FELLOWSHIPS

Travelling Fellowships

R. Samuel McLaughlin Travelling Fellowships.

Two fellowships of \$2400 each are awarded annually to graduates of the Faculty of Arts or Applied Science of Queen's University at Kingston who hold the Master's degree and who have maintained distinguished standing throughout their Courses. The candidates must present reports on the year's work within twelve months of the appointment. Application must be made by letter to the Registrar not later than 1 March.

The Reuben Wells Leonard Travelling Fellowship.

Value \$500. Awarded annually to a student intending to do post-graduate work at a University within the Commonwealth. Application must be made by letter to the Registrar not later than 1 March.

Resident Fellowships

R. Samuel McLaughlin Resident Fellowships.

Twelve Resident Fellowships ranging in value from \$1000 to \$1500 are open to students in Arts and Applied Science who have taken the Bachelor's degree with Honours at Queen's University at Kingston or an equivalent degree elsewhere and who wish to do graduate work in the Humanities, Social Sciences, Mathematics, Biological Sciences, Geological Sciences, Chemistry, Physics, and Engineering. A student appointed to a Fellowship is expected to tutor or demonstrate for a period not exceeding six hours per week during the regular winter session. If he prefers not to give this service but to devote his full time to study, the Fellowship is \$350 less in value. In determining the exact amount of the Fellowship,

Graduate Fellowships

the Committee take into account the quality of the student's work and award within the limits indicated above.

Students who find it necessary to extend their research into the summer months following the regular winter session may apply for and will be given, if the instructor under whom they are working so recommends, supplementary grants of \$200 per month for a maximum of four months and up to an average value of \$600.

Application must be made by letter to the Registrar not later than 1 March.

Reuben Wells Leonard Resident Fellowships.

Under the will of the late Reuben Wells Leonard \$2000 was provided for fellowships to be awarded annually to graduates of Queen's University "who are willing and qualified to undertake independent research work in the interest of higher culture". These fellowships are tenable only by students in attendance at Queen's. Application must be made by letter to the Registrar not later than 1 March.

Departmental Fellowships

A candidate of exceptional ability qualifying for a Departmental Fellowship, valued at less than \$750 may, at the discretion of the Scholarship Committee, be given also a University Fellowship of from \$250 to \$400 to make up a total of not more than \$750. On the recommendation of the Instructor concerned, summer supplements for these Fellowships may be arranged on the same terms as for the R. Samuel McLaughlin Fellowships.

CHEMISTRY

Milton Hersey Fellowship in Chemistry. Endowed by MILTON L. HERSEY, M.Sc., LL.D., of Montreal.

Value \$400. Awarded annually; it is open to graduates of all universities and technical colleges. The holder of this fellowship shall carry on research work for the whole session and embody the results in a thesis. The research may take the form either of independent investigation or of assistance in an investigation carried on by the department. The fellow may be required to undertake tutorial work not to exceed six hours a week.

Applications for fellowships are received by the Registrar up to 1 March. If no appointment is made by that date, further applications are received up to 1 September.

Graduate Fellowships

William Neish Fellowship in Chemistry. Endowed by ADA E. NEISH and LAURA NEISH BLACK of Kingston.

Value \$400. Awarded annually; it is open to graduate students in Chemistry from Queen's or other universities. The holder of this fellowship shall carry on research at Queen's for the whole session under the direction of some member of the Department of Chemistry, and shall embody the results in a thesis. The fellows shall be required to give laboratory instruction or its equivalent not to exceed nine hours a week.

C.I.L. Fellowship in Chemistry and Chemical Engineering. Founded by the Canadian Industries Limited for research in Chemistry or Chemical Engineering.

Value \$1700. This is a resident fellowship open to graduates of Queen's or other universities. Applications are received by the Registrar up to 1 March.

Shell Oil Fellowship. Established by the Shell Oil Company of Canada.

Value \$1200, for graduate work in Chemistry, Chemical Engineering, Mechanical Engineering, Geology, Physics, Geophysics. If the Fellow is occupied in his post-graduate work for a full calendar year, a further \$600 may be made available for the remaining four months either totally or on a pro-rata basis as necessary. This money will be paid only on the advice of the Fellow's research director following consultation with the appropriate University department Head. Applications must be submitted by 1 March each year.

The Fellowship is open annually to any Science or Engineering graduate of an approved Canadian university who intends to follow a career in Canada, or any Science or Engineering graduate of an approved university who has had at least one year postgraduate study at a Canadian university and who has previously made clear his intentions to follow a career in Canada.

COMMERCE

Maritime Provinces Trade Relations Fellowship.

Value \$320. This Fellowship has been set up by the Maritime Provinces Trade Relations Committee for award to a student who is interested in proceeding to advanced graduate work in Business Administration, Commerce or Economics.

"The Fellowship is to be awarded in the year in which the payment is received from the Sun Life Assurance Company of Canada or in a subsequent year if no eligible or worthy applicant is available, to any graduate of a university in Nova Scotia, Prince Edward Island, or New Brunswick,

Graduate Fellowships

(a) who has lived in one of these provinces for at least five years before commencing undergraduate work there, or

(b) one of whose parents was born in one of the provinces, where the candidate desires to pursue postgraduate studies leading to a degree in the University's schools of business administration, commerce or economics. The University will select from qualified applicants the one it considers most deserving of financial assistance as the recipient of the Fellowship for one year."

Application must be made to the Registrar by 1 March.

GEOLOGY

E. L. Bruce Memorial Scholarship. Established in memory of Professor E. L. BRUCE, former head of the Department of Geology and Chairman of the Board of Graduate Studies.

Value \$200 plus tuition. Awarded annually to a student in the Department of Geological Sciences who has already completed a year of graduate work at Queen's University. The recipient shall be known as the E. L. Bruce Research Scholar and shall be required to do at least two hours' work per week for the Department of Geological Sciences, the type of work to be determined by the Head of the Department and to be preferably of an instructional nature.

The Committee of Award shall be made up of the Head of the Department of Geological Sciences who shall be the Chairman, one other member of the Department to be named by the Head, the Treasurer of the University and Dr F. J. ALCOCK of the National Museum of Canada. The PRINCIPAL of the University shall be an ex-officio member of the Committee.

J. B. Tyrrell Scholarship in Economic Geology. Founded by J. B. TYRRELL, LL.D., of Toronto.

Value \$500. This scholarship is awarded to a graduate student who is working in the field of Economic Geology. Applications must be sent to the Registrar not later than 1 March of each year.

The Thayer Lindsley Fellowship in Geological Sciences.

Value \$1600. Awarded on the basis of academic standing and need to a student admitted to graduate study in Geological Science. The Fellow will be required to give half time (16 hours per week) as an assistant in Economic Geological Science. The award may be tenable for a second year.

Graduate Fellowships

Major James H. Rattray, M.C., Scholarship. Founded by Major JAMES H. RATTRAY, M.C.

Value \$100. Open to students in either the Faculty of Arts or the Faculty of Applied Science; ordinarily awarded on the basis of standing in Economic Geology (including Geology of Canada), a subject of the fourth year, and tenable by a student registered for graduate work in the following year. In any year in which the scholarship cannot be used, it may be awarded at the discretion of the Scholarship Committee either as a prize or as a general proficiency scholarship at the end of the third year, and held by a student whose programme will include Economic Geology in the following year. In determining the award, the Scholarship Committee take into account aptitude as well as academic standing.

HISTORY

Sir James Aikins Fellowship in Canadian History. Created through the generosity of Sir JAMES AIKINS, K.C., LL.D., of Winnipeg, who gave an amount creating an annual revenue of \$200. This was supplemented by an equal sum contributed by Queen's University.

Value \$400. Awarded annually on the basis of distinguished work in the advanced Honours courses in Canadian History, or such other courses as the Professor of Canadian and Colonial History shall determine.

The fellowship is tenable only by students who return to the University for further work in Canadian History and is subject to the same conditions regarding tutorial work as the *R. Samuel McLaughlin Resident Fellowships*.

Western Ontario Graduates Fellowship in History. Created through the generous contributions of graduates of the University in western Ontario of an amount creating an annual revenue of \$160, which was supplemented by an equal sum contributed by Queen's University. It was established for the purpose of encouraging research in History and of providing junior assistants in the Department of History.

Value \$320. Awarded annually within the discretion of that Department to an advanced student of satisfactory academic standing in attendance at the University, and is subject to the same conditions regarding tutorial work as the *R. Samuel McLaughlin Resident Fellowships*.

INDUSTRIAL RELATIONS

Clarence J. Hicks Memorial Fellowship in Industrial Relations. Founded by friends and admirers of the late CLARENCE J. HICKS, Chairman of the Board of Trustees of Industrial Relations Counselors, Inc.,

Graduate Fellowships

New York City, and pioneer in the field of Industrial Relations, through whose leadership and assistance the Department of Industrial Relations was established at Queen's in 1937.

Value \$600, tenable at Queen's University. The fellowship is awarded annually. If in any year no qualified candidate is available, the income for that year will be accumulated for the purpose of granting an additional or larger fellowship in subsequent years.

The fellowship is available for study of, or research work in, industrial relations to graduates of Canadian universities who are nominated, within not more than five years after graduation (exclusive of any period of active service in Her Majesty's Armed Forces or in the armed forces of any ally of the Dominion of Canada), by the Director of the Department of Industrial Relations of Queen's University. Graduate work in Industrial Relations requires as a prerequisite specialized undergraduate work in economics or commerce.

The award will be made on the basis of intellectual achievement, personality, participation in student activities, standing among fellow students and promise of success in industrial relations work. Need for financial assistance will be taken into account only as between candidates otherwise of equal merit.

PHILOSOPHY

George MacBeth Milligan Fellowship in Philosophy. Endowed by GEORGE MACBETH MILLIGAN of Toronto.

Value \$400. Awarded annually to a graduate who is qualified to carry on independent research work in Philosophy.

The fellow appointed shall carry on research work at Queen's University for the whole session and shall embody the results in a thesis. Such research may take the form of assistance in an investigation. Tutorial or other help may be required, under the same conditions as for the

R. Samuel McLaughlin Resident Fellowships.

The fellowship may be awarded to a qualified graduate of another university.

PHYSICS

See the *Shell Oil Fellowship* (page 75).

FELLOWSHIPS NOT AWARDED BY THE UNIVERSITY

The Marty Memorial Scholarship

This scholarship in memory of Dr ALETTA MARTY, valued at \$1500, is offered by the Queen's University Alumnae Association. Any woman graduate of Queen's University with a Master's degree may hold this scholarship, which is ordinarily awarded for a year's graduate work overseas. A committee chosen by the Alumnae Association makes the award.

The scholarship may be awarded to the same woman for a second year. The committee is authorized to withhold the award in any year for financial or academic reasons.

Applications should reach the Registrar not later than 1 January each year. Candidates must have the Master's degree when they hold the scholarship but not necessarily when they apply for it. Further information may be obtained from the Registrar's Office.

This scholarship has been awarded to the following graduates of Queen's University:

1937	WINNIFRED (RUTLEDGE) PETERSON
1938	JEANNE (LECAINE) AGNEW
1939	ELISE M. BERRY
1940	ANNE H. (SEDEGWICK) CARVER
1941	ELEANOR (CLARKE) HAY
1942	JOYCE HEMLOW
1943	KATHLEEN (BUTCHER) WHITEHEAD
1944	ELLEN THIBAudeau
1945	RETA E. (ANDERSON) WOOD
1946	CLAIRE (CURTIS) TANNER
1947	BARBARA ROOKE
1948	ARLISS DENYES
	honour to AUDREY D. FREEMAN
1949	PAULINE JEWETT
1950	MARION ROBINS
1951	THELMA-ANNE MCLEOD
1952	honour to DOREEN MAXWELL
1953	LLEWELLA HILLIS
1954	JOAN WATSON
	honour to AUSMA RABE
1955	AUSMA RABE
1956	MARGARET (CORNETT) GREEN
	honour to ELIZABETH O'NEILL
1957	GERMAINE L'ABBÉ

Graduate Fellowships

The Rhodes Scholarship

GENERAL REGULATIONS

A Rhodes Scholarship is tenable at the University of Oxford and may be held for three years. Since, however, the majority of Rhodes Scholars obtain standing which enables them to take a degree in two years, appointments are made for two years in the first instance, and a Rhodes Scholar who may wish to remain for a third year will be expected to present a definite plan of study for that period satisfactory to his College and to the Rhodes Trustees.

Rhodes Scholars may be allowed, if the conditions are approved by their own College and by the Oxford Secretary to the Rhodes Trustees, either to postpone their third year, returning to Oxford for it after a period of work in their own countries, or they may spend their third year in postgraduate work at any university of Great Britain, and in special cases at any university on the continent of Europe, the overseas dominions, or in the United States, but not in the country of their origin.

The stipend of a Rhodes Scholar is fixed at £600 per year. This stipend should be sufficient to enable a scholar, with care, to meet his necessary expenses for termtime and vacations, but those who can afford to supplement it to a modest extent from their own resources are advised to do so. Cost of travel must be borne by the scholar.

CONDITIONS OF ELIGIBILITY

A candidate to be eligible must: (a) Be a British subject, with at least five years' domicile in Canada, and unmarried. He must have passed his nineteenth year, but not have passed his twenty-fifth birthday on 1 October of the year *for* which he is elected. (b) Have reached such a stage in his course at one of the universities in Canada that he will have completed at least two years at the university in question by 1 October of the year *for* which he is elected.

Candidates may apply either for the province in which they have their ordinary private domicile, home or residence, or in the province in which they have taken their University course.

In making nominations, Committees will have regard to the qualities laid down by Mr. Rhodes in that section of the Will in which he defined the general type of scholar he desired;

- (1) Literary and scholastic attainments;
- (2) Qualities of manhood, truth, courage, devotion to duty, sympathy, kindness, unselfishness and fellowship;

Graduate Fellowships

- (3) Exhibition of moral force of character and of instincts to lead and to take an interest in his fellows;
- (4) Physical vigour, as shown by fondness for and success in outdoor sports.

Full particulars may be obtained from D. R. MICHENER, 5 Rosedale Road, Toronto 5, Secretary of the Selection Committee for the Province of Ontario. Two Scholarships may be awarded annually in the provinces of Quebec and Ontario if qualified candidates appear.

Each candidate for a Scholarship is required to make application to the Secretary of the Committee of Selection of the province in which he wishes to compete, not later than 1 November. Application forms may be obtained from the Registrar's Office.

The following graduates of Queen's University have been awarded Rhodes Scholarships:

1905	J. M. MACDONNELL
1906	A. G. CAMERON
1907	N. S. MACDONNELL
1911	S. SCOTT
1912	H. S. SMITH
1914	A. G. CUMMING
1919	H. R. MACCALLUM
1920	K. E. TAYLOR
1922	A. D. WINSPEAR
1925	L. F. KENDALL-LEICESTER
1926	D. A. SKELTON
1936	J. G. DAVOUD
1937	G. M. BROWN
1938	G. P. GRANT
1941	G. S. BOWELL, R. S. RETTIE
1946	F. G. HOOTON
1948	MICHAEL HOWARTH
1953	I. A. STEWART
1956	A. S. KING

Canadian Federation of University Women Scholarships

The Canadian Federation of University Women offers the following scholarships:

1. SENIOR. Value \$1500, available for study or research work, open to any woman holding a degree from a Canadian university, who is not more than 35 years of age at the time of award. In general, preference will be given to those who have completed one or more years of graduate study and have a definite course of study or research in view.

2. JUNIOR. Value \$1200, open to any woman holding a degree from a Canadian University, who is not more than 25 years of age at the time

Graduate Fellowships

of award. Preference will be given to students who have studied in only one university and who desire to continue their studies in another. The following graduates of Queen's University have been awarded the Junior Scholarship:

1950 CONSTANCE BENNETT
1955 MARGARET (CORNETT) GREEN

3. PROFESSIONAL. Value \$1000, available for study in a professional school, open to any woman holding a degree from a Canadian university, who is not more than 35 years of age at the time of the award.

1957 ELAINE FREITAG

4. THE MARGARET MCWILLIAMS FELLOWSHIP. Value \$1200. This fellowship was awarded for the first time in April, 1953. It is open to any woman holding a degree from a Canadian University who is not more than 35 years of age at the time of award, and whose domicile is in Canada although she may be studying elsewhere at the date of application. Preference will be given to candidates who have started their graduate study and who have a definite course of study or research in view.

The awards are based on evidence of character, intellectual achievement and promise of success in the subject to which the candidate is devoting herself. The proposed place and plan of study or research must be approved by the Scholarship Committee.

Application blanks and further information may be obtained from the Chairman of the Fellowship Committee, Mrs. W. D. H. BUCHANAN, P.O. Box 428, Fredericton, New Brunswick. Applications and recommendations must be received not later than 1 February.

The following graduates of Queen's University have been awarded the Senior Federation Scholarship:

1930-31 MARY WHITE
1935-36 MARIE (HEARNE) CREECH
1940-41 JEANNE (LECAINE) AGNEW
1941-42 ANNE H. (SEDEGWICK) CARVER
1943-44 JOYCE HEMLOW
1944-45 KATHLEEN E. (BUTCHER) WHITEHEAD
1946-47 BARBARA M. ST. G. CRAIG
1947-48 honour to BARBARA ROOKE
1948-49 CAROL (HOPKINS) MADDISON
1952-53 DOREEN MAXWELL
1954-55 LEWELLYA HILLIS

Daughters of the Empire Postgraduate Fellowship (Overseas)

As part of a War Memorial, the Imperial Order Daughters of the Empire offers annually in each province in Canada a scholarship for one year's

postgraduate study in Great Britain. The value of the scholarship is \$2000 a year.

The conditions under which this scholarship is awarded are as follows:

(a) Candidates may be men or women. They must be British subjects with at least five years' residence in Canada, and unmarried. Each candidate must hold a degree from a recognized university or degree-granting college in Canada, and must have done or be doing postgraduate work.

(b) In each province a Committee of Selection will award the scholarship. Other things being equal, preference will be given the returned man, his sister, brother, son or daughter. The Committee of Selection will consider not only academic attainments and promise, but also personal character and physical fitness.

(c) Applications for this scholarship should be sent before 15 October, to Mrs. R. C. BENNETT, Provincial Educational Secretary, I.O.D.E., 168 Jackson Street West, Hamilton, Ontario, who will provide additional information about the scholarship.

The following graduates of Queen's University have been awarded Daughters of the Empire Overseas Scholarships:

1921-22	WATSON KIRKCONNELL
1923-24	HARTLEY MUNRO THOMAS
1936-37	HENRY STANLEY FERNS
1938-40	THOMAS JOHN ALLEN
1948-50	DAVID MCQUEEN
1954-55	GAIL WARD
1957-58	ANN SADDLEMYER

Detailed information about fellowships may be found in the *Calendar of Graduate Studies*, a copy of which will be sent on request.

Prizes

Alexander MacLachlan Peace Prize. Established by the MACLACHLAN family in memory of ALEXANDER MACLACHLAN, former President of International College, Smyrna, who throughout his life worked for a better understanding among nations.

Value \$30. Awarded annually to the student making the highest standing in HISTORY 27.

Prince of Wales Prize. Founded in 1860 by H.R.H. the PRINCE OF WALES.

A prize of the value of \$32 in books. Awarded to the graduating student in the Faculty of Arts who is adjudged to have the best academic record at Queen's.

Prizes

M. C. Cameron Prize. Founded by the late M. C. CAMERON, M.P., Goderich.

Value \$40. Awarded to the best Gaelic scholar, reader or speaker, provided that he does not take less than 50 per cent of the total number of marks in the competitive examination. Application for examination should be submitted to the Registrar before 15 January in each year. Work prescribed: any 600 lines of Ossian's *Fingal*, or an equivalent amount of any other Gaelic literature selected by the candidate; Blackie's *Language and Literature of the Scottish Highlands*, Gaelic Grammar, translation at sight of Gaelic into English and English into Gaelic. In any year in which there is no candidate eligible for the Scholarship, the moneys will be used for the purchase of books in the general field of Gaelic history and literature.

Senator Davies Poetry Prize. Given by Senator W. RUPERT DAVIES of Kingston for a period of ten years.

Value \$500. Awarded for the best English poem of not more than fifty lines. Candidates must submit their poems by 1 February of the year of award. Three typewritten copies of each poem must be submitted. They must be enclosed in one envelope addressed to the Registrar and marked on the outside "Senator Davies Poetry Prize". The writer's name must not be given but each copy must bear a motto instead of the author's name. Another sealed envelope inscribed with the same motto should be included containing (a) the author's name and (b) a signed declaration that the poem is the author's own original unaided composition. A competitor may submit more than one but not more than three poems but if more than one are submitted, each poem must be sent in enclosed in a different envelope with a different motto for each entry.

The competition is open to all resident undergraduates of the Faculty of Arts who are registered as full time students on 1 February of the year of award.

Candidates may write on any subject they choose.

Summer School Prizes

Curtis Memorial Foundation. Founded in memory of the late J. T. CURTIS of Ottawa.

Value about \$56. Awarded in October to a graduate of that year (April or September), who has completed the degree Course by extramural and Summer School work. The award is made by a special committee on the basis of scholastic ability, interest in athletics, and service to the Summer School.

Edgar Forrester Scholarship in Oral French. Founded by the late EDGAR FORRESTER, Esq.

Value \$20. Awarded to the student making the highest standing on the Summer School examination in Oral French.

Matheson Prize. Founded by the Queen's University Summer School Association in honour of the late Dean JOHN MATHESON, one time supervisor of extramural work and from 1939 to 1943 Director of the Summer School, an ardent believer in extension courses, friend and counsellor of many generations of students.

Value \$25. Awarded to the Summer School student standing highest in the August examination in MATHEMATICS 2.

W. T. MacClement Prizes. Founded by the Queen's University Summer School Association in memory of Dr W. T. MACCLEMENT, the first Director of the Summer School.

Four prizes of the value of \$25 each. Awarded on the results of the August Examinations in ENGLISH 2, PHILOSOPHY 1, HISTORY 3 and BIOLOGY 1 to the Summer School students who stand first in these courses.

McNeill Prize. Founded by the Queen's University Summer School Association to honour Dr W. E. MCNEILL, former Vice-Principal and Treasurer, a wise friend and counsellor to Summer School Executives.

Value \$25. Awarded to the Summer School student standing highest in the Fall examination in the English general course numbered beyond ENGLISH 2.

Tracy Prize. Founded by the Queen's Summer School Association to honour Dr. H. L. TRACY, former Director of the Summer School, Queen's University.

Value \$25. Awarded to the undergraduate Summer School student standing highest in the Fall examination in the honour course in English.

Wallace Prize. Founded by the Queen's University Summer School Association in honour of the late Dr ROBERT C. WALLACE, Principal of Queen's University from 1936 to 1951.

Value \$25. Awarded to the Summer School student standing highest in the August examination in GEOLOGY 1.

Summer School English Scholarship.

Value \$175. Awarded to the student in the SCHOOL OF ENGLISH who stands highest in the final examinations of this course.

Medals

A medal is awarded annually by the University in each major subject to the candidate who has made the highest standing on the whole of his Honours work in that subject, provided that such standing is Class I.

General Regulations

Changes in regulations become effective immediately. All inquiries regarding regulations should be addressed to the REGISTRAR.

Regulations Regarding Courses

DETERMINATION OF STANDING

1. Students are expected to be present at all lecture and laboratory periods in their courses. Essays, exercises, reports, and laboratory work must be done at the prescribed times during the session to the satisfaction of the Department concerned.

2. All final marks, including those assigned after supplemental examinations, are determined not merely on the results of the formal examinations but also on the standing obtained by the work of the whole term or session, including essays, exercises, reports, class tests and laboratory work.

3. The Faculty may, at any time, either during the term or after the close of the term, require any student to withdraw whose conduct, attendance, work, or progress is deemed unsatisfactory.

NUMBER OF COURSES IN A YEAR

4. Students are given credit for the full work of the year if they pass five courses with 50 per cent. Students whose standing is as low as 45 per cent in one subject are considered to have full credit for the year if they make not lower than 50 per cent in each of the other courses and an average of 60 per cent on the whole.

5. No student is allowed to take more than five lecture courses in the academic year except as in the following provisions. (a) Students are permitted to undertake extramural or extramural and Summer School work during the summer following a winter session in which they have passed in five courses. (b) Students lacking only six courses for degree may take these courses in the final regular winter session with the approval of the Dean of the Faculty.

6. Intramural students, unless excused for some special reason, must take five courses in each of the first and second years. In no case are such students allowed to take fewer than three courses in the first or second year. In exceptional circumstances they may, with the consent of the BOARD OF STUDIES, take three or four courses in the winter session and the rest in the summer provided that they attend the Summer School.

7. Students who, without special permission, drop a course, are considered to have failed in that course.

PREPARATORY COURSES

8. (a) Students with full Matriculation who desire to begin work in Greek, German or Spanish may count course A in one or more of these subjects towards a General degree. They may count course A in one only of these subjects as a free option towards an Honours degree. Unmatriculated students who use an A course in a language to remove an entrance condition may not count this course as a credit towards a degree. (b) Students who obtain less than 66 per cent in Grade XIII English Composition or equivalent examination must register in English A.

9. Courses A and 1 may not be substituted for courses 1 and 2 where the latter are definitely prescribed.

FAILURES AND LOW GRADES

Loss of Year

10. (a) Students who at the final examinations fail in two courses and do not make as much as B standing in any of the courses passed, and students who fail in more than two courses, are considered to have lost the year and may not write supplementals. Students, who at the beginning of the next academic year lack credit on more than one course or two half-courses of the previous year's work, are considered to have lost their year. (b) Students who have lost their year may retain credit only in those courses on which they have obtained at least 62 per cent.

Withdrawal

11. (a) Students who fail in four or five courses at the final examinations are required to withdraw from the Faculty of Arts. (b) Students who twice lose a year are required to withdraw from the Faculty of Arts.

12. Students who are required to withdraw from the Faculty of Arts, may be re-admitted in some subsequent session only if they give convincing evidence that they can profit from University work. The best evidence of this is the successful completion with B standing of courses taken on the extramural plan of study.

Regulations: Examinations

Examinations

MID-TERM EXAMINATIONS

13. One-hour examinations in regular class periods may be held by any instructor whenever he thinks advisable.

MID-YEAR EXAMINATIONS

14. Midwinter examinations in all whole courses are held during the last week before the Christmas holidays. In these courses credit not exceeding 50 per cent of the final marks may be assigned to the work of the first term. The attention of the students is called to REGULATION 2. Final examinations in half-courses of the first term are held in January (*see* page ix).

APRIL EXAMINATIONS

15. Final examinations in all whole courses, half-courses of the second term and reading courses are held in April. Intramural students are expected to take examinations in all the lecture courses in which they are registered in the second term. In special circumstances and on the recommendation of the professor concerned they may be given permission to postpone until August examinations in courses numbered under 10. They may not postpone examinations in Honours courses. The attention of students is specially drawn to Regulations 2 and 10.

EXAMINATIONS IN READING COURSES

16. Examinations in Reading Courses are held in April during the regular examination period and in September at the first weekend after the opening of the Session. It is not necessary to make special application for the April examinations in reading courses but application for the September examinations must be completed by July 15 on special forms which may be obtained from the Registrar. There is no charge for the examination in September if the reading course was part of the regular programme of the previous winter. If, however, it is taken during the summer as an extra course there is a fee of \$40 which may be deducted from the tuition fees of a later year in which the student is not registered in a full programme.

ADMISSION TO EXAMINATIONS. (*See also* REGULATIONS 15 and 18.)

17. Ordinarily students are not permitted to take examinations unless they have registered on the prescribed date within the academic year in which they present themselves, but graduates not in attendance who wish to

Regulations: Examinations

take examinations merely to raise their standing in courses already passed, may delay their registration until 15 February. (See REGULATION 20.)

18. No candidate is admitted to the examination hall later than thirty minutes after the beginning of the examination.

19. No candidate is permitted to take any books or papers into the examination hall except by express direction of the examiner.

SUPPLEMENTAL EXAMINATIONS

20. Supplemental examinations are held in August in all Pass courses and in the first course of Honours but no supplementals are given beyond the first course in Honours in a major or minor subject for the Honours B.A. degree. Papers are set in all subjects offered at the Summer School. Candidates must apply to the Registrar by 15 June for permission to write on the courses in which they wish to be examined. The application must be on printed forms supplied for the purpose and must be accompanied by the fee of \$10 for each paper.

21. (a) A student who fails a course (See Regulation 20) but has obtained at least 35% may write a supplemental at the next regular examination period provided that a supplemental is offered in the course concerned and that the student has not lost the year. (b) Students who fail in any course may not come up again for examination in that course except for a supplemental examination as provided in section (a) above without re-registering in the course and repeating the full work.

22. Students who have passed a course may write for higher standing. This privilege is extended to the third examination period after the first time of writing and it may be exercised only three times in all. Ex-service men and women affected adversely by this regulation may be given consideration by the Board of Studies who will recommend action to the Faculty of Arts.

SPECIAL EXAMINATIONS

23. Students who for any reason fail to take an examination on the appointed date may be required to take a special examination. The fee is ten dollars for one special examination; twenty dollars for two or more examinations.

REREADING OF EXAMINATION PAPERS

24. Examination papers and class records of students who fail by a few marks to obtain a pass or Grade B (or qualify under Regulation 4) are gone over with especial care and there is little likelihood of the original standing being changed on appeal. A formal appeal may be made within two months of the examination, however, by applying to the

Definitions

Registrar and paying a fee of \$10. The instructor and another examiner will then reread the final examination paper, consult the student's class record, and make an assessment. If, as a result, the mark is raised to a pass or Grade B (or to meet the requirements of Regulation 4), the fee is refunded in full to the student.

DETERMINATION OF STANDING

25. In determining a student's standing at a sessional examination the Departments take into account the entire class record (*See REGULATION 2.*)

STANDING

26. (a) In pass courses numbered under 10, Grade A—75 per cent; Grade B—62 to 74 per cent; Grade C—50 to 61 per cent. (b) In Honours courses numbered 10 or over and Reading courses, Grade A—75 per cent; Grade B—66 to 74 per cent; Grade C—55 to 65 per cent; Grade D—50 to 54 per cent. (c) Standing of 62 per cent or more on a course numbered 10 or over counts as B grade towards a General degree. Grade D standing on an Honours course counts towards a General degree but carries no credit towards an Honours degree.

Definitions

Courses

A candidate for the degree of Bachelor of Arts may take a General Course or an Honours Course. The latter requires greater specialization and higher standards in the work of the main subjects. Details are given on pp. 91-95 below.

Courses and Half-Courses

The word "Course", when printed with an initial capital, is used to indicate a programme of work leading to a degree or certificate. The word "course", printed with an initial small letter, indicates a unit of work occupying, as a rule, three hours a week throughout the session. A "half-course", on the other hand, usually occupies only one term, though occasionally it may run through the session. Two half-courses are equivalent to a whole course, and when the amount of work to be done is defined in courses, it is to be understood that an equivalent in courses and half-courses may be offered.

Half-courses have in addition to the numerals the letter *a* or *b*, according as they are offered in the first or second term.

Synopsis of Courses, General B.A.

Numbering of Courses

Preparatory courses in the languages are designated by the letter A.¹ Other courses are numbered with Arabic numerals (LATIN 1, GREEK 2.)

The fundamental courses in each subject are ordinarily numbered 1 and 2 (PHILOSOPHY 1, POLITICS 2) and must be taken by all proceeding to advanced work in the subject. Other courses numbered under 10 are for students on the General Course only. Courses numbered 10 and upward are Honours courses, though in most departments they are open to students on the General Course provided that prerequisites have been completed satisfactorily.

Synopsis of Courses

The following Courses of undergraduate study are offered in the Faculty of Arts:

General Courses leading to the degree of B.A.;

Honours Courses leading to the degree of B.A. with Honours and admission to the course of study leading to the Interim High School Assistant's Certificate, Type A;

Combined Course in Arts and Theology;

Combined Course in Arts and Physical and Health Education.

Candidates are subject to changes in Regulations or Courses made after their first registration unless in the judgment of the BOARD OF STUDIES undue hardship is involved. All inquiries regarding Regulations should be addressed to the REGISTRAR.

General B.A.

Candidates entering the General Course with Grade XIII standing in five subjects² are required to take fifteen courses for the General B.A. degree. Those entering with only four subjects of Grade XIII must take sixteen courses.

The General Course provides for distribution and concentration of work as follows:

A. *Compulsory courses*, all of which must be done at the University:

(1) ENGLISH 2 to be taken in the first year.

First year students must take ENGLISH A if they have obtained less than 66 per cent in Grade XIII English Composition or equivalent examination.³

¹ See Sections 8, 9, p. 87 above, General Regulations.

² See p. 34 above, Entrance Requirements.

³ See Regulation 8 (b), page 87, and page 133.

General B.A.

Any student who is not taking ENGLISH A or has not taken it, may be required by the Faculty, on recommendation of the BOARD OF STUDIES, to do so. Students who pass a test in December will be given credit in the course; otherwise they must continue in it until they have passed an examination. Once a student is enrolled in ENGLISH A, this course becomes one of the requirements for his degree.

(2) PHILOSOPHY 1 ordinarily taken in the first year.

Students who, because of conflicts in the time table, cannot take PHILOSOPHY 1 in the first year must take PHILOSOPHY 3 in one of the upper years.

(3) One course in Psychology, History, Economics or Politics.

(4) One language course in addition to English.

An "A" course does not fulfil this requirement.

(5) One science.

B. *Concentration of work* to the extent of three university courses in each of the three subjects, or five courses in one subject, four courses in another.

PARAGRAPH 2 under each departmental prescription gives the sequence of courses approved by the department concerned. Students electing to offer the concentration of five and four rather than three groups of three, must select their advanced courses in consultation with the department concerned and they must have the prerequisites for these courses.

Additional classes to make up the required total may be chosen freely subject to the regulations governing prerequisites.

Standing. Candidates must make a standing of Grade B or better in at least eight courses. In courses numbered 10 or over 62 per cent counts as the equivalent of Grade B.

The following programmes illustrate how the General Course may be planned:

English, History, French

1st Year

ENGLISH 2
PHILOSOPHY 1
HISTORY 3
FRENCH 1 or 2
a science¹

2nd Year

ENGLISH 3, 5, or 7
FRENCH 3 or 10
HISTORY 5 or 6
two options

Philosophy, Economics, Politics

1st Year

ENGLISH 2
PHILOSOPHY 1
POLITICS 2
ECONOMICS 1 or 4
a language²

2nd Year

PHILOSOPHY 3
a science¹
one option
ECONOMICS 1 or 4
POLITICS 30³

¹ One of Biology, Physics, Chemistry, Geology.

² One of French, German, Greek, Latin, Spanish. An "A" course does not fulfil this requirement.

³ For admission to POLITICS 30, B standing in POLITICS 2 is required.

Honours B.A.

3rd Year

ENGLISH 3, 5, or 7
FRENCH 14
HISTORY 5 or 6
two options

3rd Year

PHILOSOPHY 7
ECONOMICS 12, 13, or 23
POLITICS 31 or another
course in Politics selected
on the advice of the De-
partment
two options

Mathematics and Physics, Biology, Chemistry

The following programme presupposes Grade XIII standing in Mathematics, Physics and Chemistry. If the student has also Grade XIII standing in Biology, the work in Biology will be: first year—BIOLOGY 2 or 3, second year—BIOLOGY 2 or 3, third year—BACTERIOLOGY 10 or PHYSIOLOGY 10. If Physics has not been taken in Grade XIII, the student will have to offer PHYSICS 1 as one of the options since it is prerequisite to PHYSICS 2. If Chemistry has not been taken in Grade XIII, the student may take CHEMISTRY 1 in the first year, CHEMISTRY 2 in the second year and CHEMISTRY 11 or 12 in the third year.

1st Year

ENGLISH 2
BIOLOGY 1
a language³
MATHEMATICS 2
CHEMISTRY 2

2nd Year

BIOLOGY 2
CHEMISTRY 11
MATHEMATICS 3A & 7B or 10
PHILOSOPHY 3
one of PSYCHOLOGY 2, a course
in HISTORY, ECONOMICS 1 or 4,
POLITICS 2

3rd Year

BIOLOGY 3
CHEMISTRY 12
PHYSICS 2
two options

Honours B.A.

There are several types of Honours Courses: (a) The Specialized Honours course; (b) The General Honours Course¹; (c) The Honours Course for students preparing for admission to the Ontario College of Education for the teacher's certificate in English and French, German or Spanish, English and Latin, Latin and French, French and German or Spanish.²

ADMISSION TO HONOURS

At the end of the first year candidates for Honours must make formal application to the REGISTRAR. These applications are referred first to the departments concerned for recommendation, and then to the Committee of Departments for final action. Candidates are admitted to an

¹ See p. 95 below.

² See p. 96 below, Interim High School Assistant's Certificate.

³ One of French, German, Greek, Latin, Spanish. An "A" course does not fulfil this requirement.

Honours B.A.

Honours Course if in their special subjects they have made at least 62 per cent in the preceding Pass class and at least 60 per cent in the preceding class numbered 10 or over, and if their standing in other subjects is considered satisfactory.

FURTHER HONOURS WORK

At the end of each year the candidate's record is reviewed by the COMMITTEE OF DEPARTMENTS to determine fitness to proceed in Honours. All not doing satisfactory work are required to revert to a General Course. *The Major*: A minimum mark of 55% is required on each course in the major and an average of 60% for third Class Honours, 66% for second Class Honours, 75% for first Class Honours. If Pass or Honours courses from a second Department are offered as part of the major the minimum standing required is 55% in each course. Candidates should note that these courses are taken into account when the final standing for the degree is determined. *The Minor*: A minimum mark of 55% is required in each course in the minor numbered 10 or over and an average of at least 60%.

SPECIALIZED HONOURS COURSES

The specialized Honours degree may be taken in the following departments: Biochemistry, Biology, Chemistry, Greek, Latin, English, French, Geological Sciences, German, History, Mathematics, Philosophy, Physics, Physiology, Political and Economic Science, Psychology and Spanish.

The programme is made up of eighteen courses from Grade XIII standing in five subjects, with a major consisting of lecture and reading¹ courses in the subject of the degree, a minor made up of lecture courses in a related subject, and general courses. The requirements for each degree Course are outlined in detail under the departmental prescriptions.

LENGTH OF COURSE

The Course for the degree of B.A. with Honours normally covers four years from Grade XIII in five subjects. Ordinarily candidates are not permitted to register in any academic year in more than five courses including reading courses. It is possible, however, for candidates of exceptional ability to complete the Course in three years from Grade XIII by

¹ A reading course is equivalent in weight to a three-hour lecture course and the content is determined by the Major Department. Field work or research approved by the Major Department may be substituted for one of the reading courses.

taking five regular lecture courses or the equivalent in hours in each of the three years, and by doing the reading courses in the penultimate and final years and in the intervening summer. Such candidates must have Grade A standing in each special subject and an average of Grade A on the year's work preceding admission to Honours.

GENERAL HONOURS COURSE

The General Honours Course is intended for the student who does not plan to specialize to the extent required by the specialized Honours Course but who wishes to have a programme providing for advanced work in three subjects of study. The requirements for degree are made up of nineteen courses from Grade XIII in five subjects (twenty courses from Grade XIII in four subjects) as follows: (a) Lecture courses in each of the three special subjects (see course requirements for each subject under the departmental prescription); (b) One reading course in each of the three special subjects; (c) General courses as required on the specialized Honours Course; (d) The candidate is required to take, in addition to course examinations, one general examination in each special subject. (e) A minimum mark of 55% is required on courses in each special subject numbered 10 or over and an average of 60% for third Class Honours, 66% for second Class Honours, 75% for first Class Honours.

FINAL YEAR EXAMINATIONS

In addition to the regular sessional examinations, candidates must write general examinations at the conclusion of their Course as follows:

(a) Specialized Honours Course—two general examinations in the major subject.

(b) General Honours Course—one general examination in each of the three special subjects.

(c) Courses for students preparing for admission to the Ontario College of Education for teachers' certificates in English and French, German, Spanish or Latin, Latin and French, French and German or Spanish—one general examination in each of the two subjects.

It should be noted that Departments may, with the permission of the Faculty, excuse students in the final year from course examinations in the Major subject and give instead four or five general examinations.

Social Work, Teachers' Certificates

CLASSES IN HONOURS

Degree standing is awarded in the specialized Honours Course on the basis of proficiency in honours courses in the major subject; in the General Honours Course, in the three subjects combined; in the Courses leading to Teachers' Certificates in the languages, in the two special subjects.

GENERAL DEGREE ON AN HONOURS COURSE

Candidates who pass all their classes but fail to attain honours because they have made less than 60 per cent in one or both of the major and minor are granted a General degree.

Social Work

Students who wish to proceed to social work after graduation should choose a programme of undergraduate courses which so far as possible includes Psychology, Sociology, Politics and Economics. Courses in Canadian and English History are also desirable. Directors of Canadian Schools of Social Work are willing to give advice to undergraduates wishing to plan a course acceptable to the Admissions Committees of their Schools.

Courses for Teachers' Certificates (Ontario)

HIGH SCHOOL TEACHER'S CERTIFICATE

Under the regulations of the Ontario Department of Education a candidate for a High School Teacher's Certificate who holds a First or Second Class certificate and who has had experience in the Public, Separate or Continuation Schools of the Province may be partially relieved from attendance at the Ontario College of Education.

The academic standing for admission to the professional Course leading to the Interim High School Assistant's certificate, Type B, is the degree of Bachelor or Master of Arts, Bachelor or Master of Science, or Bachelor of Commerce, from a university within the Commonwealth, based upon Courses approved by the Minister of Education.

INTERIM HIGH SCHOOL ASSISTANT'S CERTIFICATE, TYPE A

By an agreement between Queen's University and the Department of Education of Ontario, graduates of the Faculty of Arts in certain specified Honours Courses may be certified as having completed the academic requirements for admission to the course of study leading to the Interim High School Assistant's Certificate, Type A, at the Ontario College of Education.

The Department of Education has authorized certificates in

Classics
Latin & French
Latin & English
English
English & History
English & French
English & German
English & Spanish
French & German or Spanish
History
Mathematics & Physics
Science
Commerce
Mathematics
Physical and Health Education

Candidates for admission to the course of study at the Ontario College of Education leading to the Interim High School Teaching Assistant's Certificate, Type A, are required to complete the following requirements.

Classics. The regular Honours degree Course in Latin and Greek (see pp. 123 and 127).

Latin and French or English

LATIN 2, 12, 13, ANCIENT HISTORY 4; and two of LATIN 20, 30, ANCIENT HISTORY 51;

ENGLISH 2, 10, and four of 14, 15, 19, 20, 21, 22; or FRENCH 2, 10, 14 and three advanced courses;

CLASSICS R1 and 2 and ENGLISH R1; or CLASSICS R1 and two reading courses in English or French;

General courses: PHILOSOPHY 1, a science, a free option. If the candidate has Grade XIII standing in a science, the second general course may be a free option.

One general examination in each of the two special subjects.

English and French, German or Spanish

ENGLISH 2, 10, and four of 14, 15, 19, 20, 21, 22;

FRENCH 2, 10, 14 and three advanced courses;

GERMAN 2, 10, 12, 14, 16, 18; or SPANISH 2, 10, 22, 24, 29, 30;

Two reading courses in English and one in French, German or Spanish, or two reading courses in French, German or Spanish and one in English;

General courses: PHILOSOPHY 1, LATIN 2, a science. If the candidate has Grade XIII standing in a science, the third general course may be a free option.

French and German or Spanish

FRENCH 2, 10, 14 and three advanced courses;

GERMAN 2, 10, 12, 14, 16, 18; or SPANISH 2, 10, 22, 24, 29, 30;

Teachers' Certificates

Two reading courses in French and one reading course in German or in Spanish; or one reading course in French and two reading courses in German or in Spanish;

General courses: ENGLISH 2, LATIN 2, PHILOSOPHY 1.

If the candidate has not offered a Grade XIII science on admission, a course in science must be taken in place of the reading course in the subject in which two reading courses are normally required.

One general examination in each of the two special subjects.

English. The specialized Honours degree Course in English (see p. 132) with a minor in Social History as follows: HISTORY 3 or 5 or 6, 12, and two courses to be selected from HISTORY 14, 16, 18A, 18B, 19, 20, 24. FRENCH 2 or GERMAN 2 must be included among the general courses.

English and History

ENGLISH 2, 10, 14A, 14B, 15, 20, 22;

HISTORY 6, 14, 18, 19, 20 or 28, 27;

Two reading courses in ENGLISH (R1 and R3) and one in History, or two reading courses in HISTORY (R6 and a second reading course selected in consultation with the Department of History);

General courses: PHILOSOPHY 1, LATIN 2, ANCIENT HISTORY 4.

History. The Regular Honours Course in History (see p. 155) with a minor in Political and Economic Science made up of ECONOMICS 1, 4, POLITICS 2, and two further courses in Politics or Economics.

GEOLOGY 1 or GEOGRAPHY 1 and HISTORY R5 are also prescribed.

Mathematics. The Honours Course in Mathematics with a minor to be selected on the advice of the Department of Mathematics, or as an alternative to the Honours Course in Mathematics, a four-year Course that is not so highly specialized, as follows:

(a) Eight courses in Mathematics*, including MATHEMATICS 2, 3A, 7B, 10, 12, 13, 21, ASTRONOMY 1, PHYSICS 2;

(b) ENGLISH 2;

(c) one language in addition to English (an "A" course will not satisfy this requirement);

(d) PHILOSOPHY 1 or 3;

(e) PSYCHOLOGY 2 or a course in History, Economics, or Politics;

(f) four courses in a subject other than Mathematics or three courses in each of two other subjects;

(g) optional courses to bring the total to twenty.

The minimum standing required is 50% in each course and an average of 60% on the eight courses listed under (a).

Mathematics and Physics. The Honours Course in Mathematics and Physics or Physics and Mathematics.

* On the advice of the Department, other courses in Mathematics may be substituted for those listed.

Science. The General Honours Course in Science for Teachers as follows:

(a) BIOLOGY 2, 3, 21, R1, PHYSIOLOGY 10;

CHEMISTRY 2, 11, 12, 14 or 17, R1;

PHYSICS 2, 11, 14A, 13B, R1, MATHEMATICS 2;

General courses to complete the work for degree: ENGLISH 2, PHILOSOPHY 1, a language, a free option. If the candidate has Grade XIII standing in a language he may use the third general course as a free option.

One general examination in each special subject.

or (b) The regular Honours Course in two of Biology (see pp. 111-112), Chemistry (see pp. 117-119), Physics (see p. 176), with two courses from the third science in place of free options or in substitution for courses ordinarily prescribed. For example: with Chemistry as major, Biology as minor, PHYSICS 1 unless already taken in Grade XIII is offered in place of the free option and PHYSICS 2 is substituted for one of CHEMISTRY 22, 24, 25. Similarly, with Biology as major and Chemistry as minor, PHYSICS 1 unless offered as one of the subjects of Grade XIII is taken as one of the courses in the minor and PHYSICS 2 as the supporting course or in place of a free option as prescribed under the departmental prescription for Biology. With Physics as major, Biology as minor, CHEMISTRY 1 is offered in place of a free option and CHEMISTRY 2 in place of a reading course. With Chemistry as major, Physics as minor, BIOLOGY 1 unless already taken as one of the subjects of Grade XIII is offered in place of the free option and BIOLOGY 2 or 3 is substituted for one of CHEMISTRY 22, 24, 25.

COMMERCIAL SPECIALIST'S CERTIFICATE

Students working with the Department of Education towards the Commercial Specialist's Certificate are granted exemption from attendance and examination in the following subjects if they pass the equivalent university courses with Grade A or B standing. They are given exemption from attendance only if they pass the courses with Grade C standing:

<i>Department of Education Courses</i>	<i>University Equivalent</i>
Arithmetic of Investment	MATHEMATICS 7B
History of Commerce and Industry	ECONOMICS 4
Theory of Economics	ECONOMICS 10
Money and Banking	ECONOMICS 12
Business Law	COMMERCE 60
Book-keeping	COMMERCE 63
Accountancy Theory	COMMERCE 64
Accountancy Practice	COMMERCE 67B

Graduates in Commerce whose courses have included MATHEMATICS 7B and COMMERCE 67B are exempted from attendance and examination in all the subjects of the Commercial Course (Accountancy Option) except Shorthand Theory, Shorthand Practice and Transcription, Typewriting, Penmanship, Office Practice and Business Papers, Minor and Major Methods.

Inspectors' Certificates

INTERIM HIGH SCHOOL ASSISTANT'S CERTIFICATE, TYPE A for Graduates in Applied Science

The minimum academic requirements for admission to the courses shall be a degree in Applied Science with standing of at least 66% at the final examination of the Courses presently listed in the calendars of the University of Toronto or Queen's University with the exception of the Courses in Metallurgy, Mining, Geology.

Mathematics and Physics. A degree in Applied Science in one of Mining Engineering, Chemistry, Geological Sciences, Chemical Engineering, Metallurgical Engineering, or Civil Engineering, with a subsequent standing of at least 55 per cent in each of the following courses and an average of at least 66 per cent in the work of each subject: MATHEMATICS 12, 19, and one other course, numbered over 19; PHYSICS 10A, 12B, 13B, 14A—credit towards these being given when equivalent subjects have been satisfactorily taken in Course.

A degree in Applied Science in the Department of Electrical Engineering or Mechanical Engineering with subsequent standing of at least 55 per cent in each of the following courses, and an average of at least 66 per cent on the work of each subject: MATHEMATICS 12, and one other course, numbered 19 or over; PHYSICS 10A, 12B, 13B, 14A—credit towards these being given when equivalent subjects have been satisfactorily taken in Course.

A degree in Applied Science in the Department of Physics with an average of at least 66 per cent in MATHEMATICS VII, MATHEMATICS VIII and MATHEMATICS X and with subsequent standing of at least 55 per cent in each of the following courses and an average of at least 66 per cent: PHYSICS 10A, 12B, 13B, 14A—credit towards these being given when equivalent subjects have been satisfactorily taken in Course.

INSPECTORS' CERTIFICATES

The academic requirements for a Public School Inspector's certificate are as follows:

(a) An Honours degree in Arts or the degree of B.Com. (Commercial Specialists' Option) in accordance with the present agreement as prescribed for Specialist qualifications, or

(b) A General degree in Arts with a standard of 66 per cent in any five courses beyond course 1, and Grade B in any other five courses.

Combined Course in Arts and Physical and Health Education

F. L. BARTLETT, B.A., *Professor and Director of the
School of Physical and Health Education*

J. F. EDWARDS, M.A.(P.E.), *Associate Professor*

F. TINDALL, A.B., *Assistant Professor*

MARION ROSS, M.A., *Assistant Professor*

A. L. LENARD, B.A., B.P.H.E., *Lecturer*

DOROTHY LEGGETT, M.Sc., *Lecturer*

Arts and Physical Education

ANNA C. TURNBULL, B.Sc.(P.E.), *Lecturer*

KEITH N. HARRIS, *Instructor*

R. A. GOW, *Instructor in Swimming*

A Course of study leading to the degrees of Bachelor of Arts and Bachelor of Physical and Health Education in four years. By agreement between Queen's University and the Ontario Department of Education a graduate of the Course in Arts and Physical and Health Education is admitted to the course of study at the Ontario College of Education leading to the Interim High School Assistant's Certificate, Type B, and to the High School Assistant's Certificate, Type A, in Physical and Health Education.

ADMISSION

The requirement for admission is:

- (a) The Secondary School Graduation Diploma or its equivalent.
- (b) Grade XIII standing or its equivalent in each of English, Latin or Mathematics (at least two papers)¹, a language which may be Latin if Mathematics is offered, and two other subjects, with a minimum average of 60 per cent on all five subjects.

Candidates offering only four of the subjects as specified above may be admitted provided they have at least second class Honours standing on three of them. These students are conditioned in the subject in which they lack standing and they may remove this condition by writing off the Grade XIII paper or papers in the subject concerned, or by taking an extra course at the University. *Candidates are advised to offer Grade XIII English, a language, Mathematics (at least two papers, of which one should be Trigonometry), Physics and Chemistry.* (see page 37)

FEES

For full information about fees see pp. 48-50.

COURSE OF INSTRUCTION

1st YEAR. *Arts*: One or two of BIOLOGY 1, CHEMISTRY 1, PHYSICS 1², ENGLISH 2, PSYCHOLOGY 2, a language (other than English), an option (subject to timetable, for students taking only one science). *Physical Education*³: I Women—Seasonal sports (tennis, basketball, badminton, volleyball), Gymnastics and dancing, Aquatics; Men—

See footnotes ¹, ², ³ on following page.

Arts—Theology

Seasonal sports (track and field athletics, basketball), Gymnastics and apparatus, Aquatics.

2ND YEAR. *Arts*: PHILOSOPHY 3, PSYCHOLOGY 3, POLITICS 2, ENGLISH 3⁴, BIOLOGY 3. *Physical Education*: II Women—Seasonal sports (archery, track and field athletics), Gymnastics and dancing, Rules and officiating, Aquatics; Men—Seasonal sports (football, hockey), Rules and officiating, Gymnastics and apparatus, Aquatics.

3RD YEAR. *Arts*: ENGLISH 7⁴, PSYCHOLOGY 8, two options (subject to timetable), PHYSIOLOGY 10. *Physical Education*: III Women—Seasonal sports, Gymnastics and dancing, Advanced coaching; Men—Advanced coaching, Gymnastics and apparatus, Recreational games and sports.

4TH YEAR. Specialized study under the direction of The School of Physical and Health Education and The Faculty of Medicine is given in the following subjects (The number of hours of weekly instruction is shown in parentheses after each subject.) Anatomy (4), Preventive Medicine (2), History of physical education (1), Interpretations and Objectives (1), Methods and materials in physical and health education (A) Elementary and secondary schools (3)
(B) Recreation, playground administration, and camping (2)
(C) Evaluation (1), Training and Conditioning (1), Practice teaching and field work (2), Gymnasium practice (3), Crafts (2).

Combined Course in Arts and Theology

Queen's University and Queen's Theological College join in offering a Combined Course in Arts and Theology, leading to the Degree of B.A. and the Testamur in Theology. The complete Course covers five years.

¹ Candidates entering MATHEMATICS 2 with standing in only two parts of Grade XIII Mathematics are required to attend a tutorial class and pass an examination in the third part before receiving credit for MATHEMATICS 2.

² The selection from the courses in science will depend on the science or sciences offered at Grade XIII level. A student entering with Chemistry as part of his Grade XIII programme will take in his first year at the University, BIOLOGY 1 and PHYSICS 1. A student entering with Grade XIII standing including two sciences e.g., PHYSICS 1 and CHEMISTRY 1, will take in his first year, BIOLOGY 1 and a free option.

³ The weekly period of instruction in Physical Education is 5 hours in each of the first three years.

⁴ ENGLISH 3 and 7 are not compulsory. The candidate may make up a group by offering courses in another subject but care must be taken to provide for a total of three courses in the subject over a period of three years. ECONOMICS 4, POLITICS 2 and Sociology may be offered as a group; BIOLOGY 3, PHYSIOLOGY 10 and Anatomy of the fourth year may be offered as a group.

The first and second years are entirely within the Faculty of Arts and candidates must be fully qualified for admission to this Faculty. The third year consists of one class in Arts, for which a fee of \$70 is charged, and the first year in Theology. The fourth and fifth years of the Combined Course are the second and third years in Theology.

The degree of Bachelor of Arts is awarded at the end of the third year to candidates who have passed in all their subjects and made Grade B in at least half of the classes offered for the B.A. degree. The Testamur in Theology is granted after the successful completion of the fifth year. Additional courses in Theology equivalent to at least one year of further study are required for the degree of Bachelor of Divinity.

COURSES OF INSTRUCTION

1st Year. ENGLISH 2, GREEK 1, HEBREW 1, PHILOSOPHY 1, a science.

2nd Year. GREEK 2, HEBREW 2, three options.

3rd Year. An Arts course, Church History, Philosophy of Religion, Old Testament Criticism, New Testament Criticism, Practical Theology and Public Speaking.

4th Year. Church History, Systematic Theology, Old Testament Criticism, New Testament Criticism, Practical Theology.

5th Year. Church History, Systematic Theology, Old Testament Criticism, New Testament Criticism, Practical Theology.

Students who offer Greek as one of the subjects on the Secondary School Graduation Diploma may take GREEK 1 in the first year, and a freely chosen class in place of GREEK 2 in the second year. Students whose Grade XIII programme did not include Greek, may offer a second course in Philosophy in place of GREEK 2. In choosing options students must plan to complete three courses in each of two subjects by the end of the third year.

Graduate Courses

MASTER OF ARTS

1. The degree of Master of Arts is awarded in recognition of the satisfactory completion of a Course of intensive study under the direction of one department of the Faculty of Arts. This work includes: (a) Research and thesis; (b) Advanced courses, normally two in number. Graduate students taking courses open also to undergraduates will be required to do additional work in such courses.

The weight of work required is that of a full academic year, of which ordinarily half is represented by the research and thesis. The department may require the candidate to attend certain lectures cognate to the Course of study.

Graduate Courses

2. A candidate for the degree of Master of Arts must have taken the degree of Bachelor of Arts or its equivalent with first or second class honours. The department concerned may, however, recommend that any application be not accepted.

3. Application for permission to become a candidate for the degree of Master of Arts must be made to the REGISTRAR at least two weeks before the opening of the session. Applicants who are not graduates of Queen's University must send official certificates giving full details of their previous academic training, including courses taken and grades received, together with a marked Calendar showing the content of the courses. All applicants must specify the field in which they desire to carry on their studies.

4. The BOARD OF GRADUATE STUDIES deals with the applications of candidates and the prescriptions of work officially proposed for each.

5. All candidates must take the following final examinations:

(a) Written examinations on all courses prescribed. The minimum standing required in each of these examinations is second class honours.

(b) An oral examination on the subject of the candidate's research. The examination is conducted by at least two members of the department concerned, and at least two other members of the teaching staff of the University not members of the department concerned, to be selected by the department concerned. The chairman of the BOARD OF GRADUATE STUDIES acts as the chairman for the examination or appoints some member of the University teaching staff, not a member of the department concerned, to do so.

6. Each candidate for the Master's degree must submit three typed but unbound copies of his thesis to the REGISTRAR by 20 April if he is a candidate for the degree in the Spring, not less than two weeks before the oral examination if he wishes to come up for his degree in the Fall.

7. Except by special permission of the BOARD OF GRADUATE STUDIES, candidates are required to do all the work for the Master's degree in residence.

8. The fees charged are outlined on page 50.

DOCTOR OF PHILOSOPHY

Information about requirements for the degree of Doctor of Philosophy may be found in the *Calendar of Graduate Studies*.

Graduate Record Examinations

Queen's University welcomes the submission of Graduate Record Examination scores by any student applying for a scholarship and for admission to graduate work. This examination requires no special preparation. It is intended as an additional measure of the candidate's general preparation. For information regarding the examination, application should be made to GRADUATE RECORD EXAMINATION, BOX 592, PRINCETON, NEW JERSEY. The fee for the examination is \$12.

The Miller Analogies Test

Some universities in the United States require applicants for admission to their graduate schools to take the Miller Analogies Test. Queen's University is a recognized centre for administering this test and arrangements may be made through Professor Blackburn of the Department of Psychology for any student who wishes to take it. The fee is \$1.25.

Courses of Instruction

Art

ANDRÉ BIÉLER, R.C.A. *Resident Artist and Professor*

ART 1, ART 2 and ART 3 are offered in consecutive years and may be counted towards the General B.A. degree either as a group or as individual free options. On recommendation of the departments concerned, students may apply to the Faculty of Arts for permission to combine courses in Fine Art (Art, Music, Drama) to make up a group towards the General B.A. degree.

The aim of the courses is to show that the essential character of each period in history has been given expression through Art.

COURSES OF INSTRUCTION

ART 1. Offered in 1959-60.

Visual elements of art expression, Prehistoric art in Europe, Egyptian art, Classical art, Oriental and Primitive art.

ART 2. Offered in 1957-8.

Early Christian art, Mediaeval art, the Renaissance.

Monday and Thursday at 4.30; Tuesday 3.30-5.30

ART 3. Offered in 1958-9.

The High Renaissance throughout Europe, Baroque art, Modern art.

STUDIO

Practical work in drawing, modeling and painting as related to the period under study.

Text-books: *Art through the Ages*, Helen Gardner (Henry Holt); *The Meaning of Art*, Herbert Reed (Penguin); *An Outline of European Architecture*, Nikolaus Pevsner (Penguin).

Bacteriology

J. H. ORR, M.D., C.M., F.R.C.P.(C), F.R.S.C., *Professor*

NORMAN A. HINTON, M.D., C.M., M.Sc., (Med.), Dip. Bact., *Associate Professor*

Students on a General Course taking Biology as one of the subjects of concentration may offer BACTERIOLOGY 10 as part of the Biology prescription. Students taking Biology or Biochemistry for honours may include BACTERIOLOGY 13 in their Course. They should consult the head of the department.

COURSES OF INSTRUCTION

BACTERIOLOGY 10. *Introductory Course.*

An introductory course in general bacteriology.

Prerequisites—2 courses in Biology and 2 courses in Chemistry.

Text-books: Frobisher, *Fundamentals of Microbiology*; Kelly and Hite, *Microbiology*.

Lectures—Monday and Wednesday at 10

Laboratory—Friday, 1.30-4.30

BACTERIOLOGY 13. *General Medical Bacteriology.*

A systematic study of the disease producing bacteria, infection and immunity.

For honours students.

Text-book: Jordan and Burrows, *Bacteriology*; Smith and Conant, *Zinsser's Text Book of Bacteriology*.

Lectures—Monday, Wednesday, Friday at 9

Laboratory—Monday, & Wednesday, 1.00-4.00, or Tuesday & Thursday, 1.00-4.00 in the fall term.

BACTERIOLOGY 14. *Immunology.*

Prerequisite—BACTERIOLOGY 10.

For honours or graduate students. Alternate years; offered in 1957-8.

BACTERIOLOGY 15. *The Viruses and Rickettsia.*

For honours and graduate students. Alternate years; not offered in 1957-8.

BACTERIOLOGY 20. *Research in Bacteriology.*

Biochemistry

J. M. R. BEVERIDGE, B.Sc., Ph.D., M.D., *Craine Professor of Biochemistry*

R. O. HURST, B.A., Ph.D., *Assistant Professor*

THE HONOURS COURSE IN BIOCHEMISTRY

Candidates planning to take the Honours Course in Biochemistry are advised to offer Grade XIII subjects as follows: English, Mathematics (3 papers), French or German, Physics and Chemistry.

Students are admitted to the Course in Biochemistry in the third year if they have completed BIOLOGY 1 (*General Biology*), CHEMISTRY 2 (*General Chemistry*), CHEMISTRY 11 (*Analytical Chemistry*), CHEMISTRY 12 (*Organic Chemistry*) with satisfactory standing. The first course in Biochemistry is BIOCHEMISTRY 16. Students must consult the head of the department before registering in any courses in Biochemistry, but they may apply for the Honours Course in Biochemistry at the beginning of the second year.

Biochemistry

The programme for the degree is as follows:

- (a) BIOLOGY 1—*General Biology*
3—*General Zoology*
PHYSIOLOGY 10—*Animal Physiology* (under certain circumstances it may be possible to substitute PHYSIOLOGY 20 or 25).
MATHEMATICS 2—*Differential and Integral Calculus*
CHEMISTRY 2—*General Chemistry*
11—*Analytical Chemistry*
12—*Organic Chemistry*
14—*Physical Chemistry*
22—*Advanced Organic Chemistry*
BIOCHEMISTRY 16—*Introduction to Biochemistry*
20—*Advanced Biochemistry*
21—*Biochemical Preparations*
R1—*Hormones and Enzymes*
R2—*Problem in Biochemistry*

And one optional course which may be either BACTERIOLOGY 10 (*Introductory Course*) or BIOLOGY 21 (*Plant Physiology*). If BIOLOGY 21 is selected, BIOLOGY 2 (*General Botany*) must be taken as a prerequisite. In certain cases, after consultation with the Head of the Department, an appropriate substitution for these courses may be made.

(b) General courses to complete the work for the degree:

ENGLISH 2, PHILOSOPHY 1, an optional course (MATHEMATICS 3A and 3B are recommended).

(c) Two general examinations in Biochemistry, one written and one oral.

The work for the Course in Biochemistry requires four years and normally is arranged as follows:

First Year ENGLISH 2, BIOLOGY 1, CHEMISTRY 2, MATHEMATICS 2, PHILOSOPHY 1.

Second Year CHEMISTRY 11, CHEMISTRY 12, BIOLOGY 3, a general course.

(the student is advised to register for MATHEMATICS 3A and 3B although a free option acceptable to the department may be taken).

BIOLOGY 2 should be taken in this year if BIOLOGY 21 is to be offered as the option in the third year.

Third Year BIOCHEMISTRY 16, BACTERIOLOGY 10 or BIOLOGY 21, CHEMISTRY 14, CHEMISTRY 22.

Fourth Year BIOCHEMISTRY 20, BIOCHEMISTRY 21, BIOCHEMISTRY R1, BIOCHEMISTRY R2, PHYSIOLOGY 10.

COURSES OF INSTRUCTION

BIOCHEMISTRY 16. *Introduction to Biochemistry.*

This course involves a study of the chemical properties of the components of the diet—proteins, fats, carbohydrates, vitamins, and minerals. The role of each of these components in nutrition is considered together with the processes of digestion, absorption, intermediary metabolism, and excretion. The lectures in this course are combined with those given in BIOCHEMISTRY 18.

Prerequisites—CHEMISTRY 2, 11, 12; BIOLOGY 1. Text-books: West and Todd, *Text Book of Biochemistry*, 2nd Ed.; Fruton and Simmonds, *General Biochemistry*, 1st Ed.; White, Handler, Smith and Stetten, *Principles of Biochemistry*, 1st Ed.; Cantarow and Schepartz, *Biochemistry*, 1st Ed.; Hawk, Oser and Summerson, *Practical Physiological Chemistry*, 13th Ed. (the foregoing texts are recommended for Honours students in Biochemistry); Mitchell, *Text Book of Biochemistry*; Harrow and Mazur, *Textbook of Biochemistry*, 6th Ed.

Lectures—1st Term: Monday and Friday at 9, Tuesday at 8
2nd Term: Monday, Wednesday and Friday at 9

Laboratory—Wednesday or Thursday, 1.30-4.30

A change in hours for lectures and laboratory may be made.

BIOCHEMISTRY 18. *Animal Biochemistry.*

This course is designed for medical students, but graduate students may register in it after consulting the Head of the Department. The general outline is the same as that given for BIOCHEMISTRY 16 but in the second term particular attention is paid to the study of metabolic disturbances, their detection by means of biochemical tests, and the application of these procedures in the practice of medicine.

Prerequisites—CHEMISTRY 2, 11, 12; BIOLOGY 1, 3. Text-books: West and Todd, *Text Book of Biochemistry*, 2nd Ed.; Walker, Boyd and Asimov, *Biochemistry and Human Metabolism*; White, Handler, Smith and Stetten, *Principles of Biochemistry*, 1st Ed.; Cantarow and Schepartz, *Biochemistry*, 1st Ed.; Kleiner, *Human Biochemistry*; Hawk, Oser and Summerson, *Practical Physiological Chemistry*, 13th Ed.; Bodansky and Bodansky, *Biochemistry of Disease*, 2nd Ed.; Hoffman, *The Biochemistry of Clinical Medicine*; Cantarow and Trumper, *Clinical Biochemistry*, 5th Ed.

Lectures—Monday, Wednesday, Friday at 9: for first term
Hours for second term to be arranged

Laboratory—Wednesday or Thursday, 1.30-4.30

A change in hours for lectures and laboratory may be made.

Biochemistry

BIOCHEMISTRY 20. *Advanced Biochemistry.*

An intensive study of selected topics in biochemistry to be chosen at the discretion of the staff and including some of the following subjects: nucleic acids and nucleoproteins; protein chemistry; metabolism of proteins, carbohydrates and fats; steroids; carbon dioxide and oxygen transport; biological oxidation and chemical energetics. Text-books: West and Todd, *Text Book of Biochemistry*, 2nd Ed.; Fruton and Simmonds, *General Biochemistry*, 1st Ed.; Cantarow and Schepartz, *Biochemistry*, 1st Ed.; Baldwin, *Dynamic Aspects of Biochemistry*, 2nd Ed.

Prerequisite—BIOCHEMISTRY 16 or 18.

Lectures—Tuesday, Thursday and Saturday at 10

A change in hours for lectures may be made.

BIOCHEMISTRY 21. *Biochemical Preparations.*

This course includes the determination and isolation of compounds important in biochemistry; studies on enzyme kinetics, electrometric titrations, spectrophotometric and chromatographic analyses.

Prerequisite—BIOCHEMISTRY 16 or 18. BIOCHEMISTRY 20 may be taken concurrently.

Laboratory—Monday, 9-12 and 1.30-4.30

Reading Courses

BIOCHEMISTRY R1. *Hormones and Enzymes.*

The section on hormones is covered during the first term and involves assigned reading on the general field of hormones and the preparation of one essay of 4,000-5,000 words on special topics. Recent reviews and the more important original papers must be consulted in the preparation of these manuscripts. The student is required to present the subject matter of the essay in the form of a 35-45 minute talk before a seminar group. The section on enzymes is covered during the second term and is handled in the manner described for the section on hormones. Reading assignments on the general field of enzymology are given at intervals throughout the year. The student is advised to audit the graduate lecture course in enzymology.

Prerequisite—BIOCHEMISTRY 16 or 18.

BIOCHEMISTRY R2. *Problem in Biochemistry.*

Each student will be assigned a problem in biochemistry on which he must work at least two afternoons a week in the laboratory. A written report concerning the study must be presented at the end of the term.

Prerequisite—BIOCHEMISTRY 16 or 18.

Graduate Work

Candidates interested in graduate work should see the *Calendar of Graduate Studies* and consult the HEAD OF THE DEPARTMENT OF BIOCHEMISTRY.

Biology

R. O. EARL, E.D., B.A., S.M., Ph.D.,

The John Roberts and The John Roberts Allan Professor of Biology

G. KROTKOV, B.S.A., M.A., Ph.D., F.R.S.C., R. Samuel McLaughlin
Research Professor of Biology

A. S. WEST, B.Sc., Ph.D., *Professor*

H. W. CURRAN, B.S., M.A., Ph.D., *Professor*

H. M. GOOD, B.A., Ph.D., *Associate Professor*

J. R. W. VALLENTYNE, B.A., Ph.D., *Assistant Professor*

H. ARLISS DENYES, B.A., M.S., Ph.D., *Assistant Professor*

Grade XIII standing in Biology or BIOLOGY 1 is prerequisite to all other courses in this department.

Candidates offering Biology as one of the subjects of concentration on the General Course take BIOLOGY 1 (*General Biology*), BIOLOGY 2 (*General Botany*), BIOLOGY 3 (*General Zoology*), if they have not included Biology in their Grade XIII programme; BIOLOGY 2, BIOLOGY 3, BACTERIOLOGY 10 (*Introductory Bacteriology*) or a third course in Biology selected on the advice of the department, if they have offered Biology of Grade XIII as one of the subjects for admission.

THE HONOURS COURSE IN BIOLOGY

Candidates planning to take the Honours Course in Biology are advised to offer Grade XIII subjects as follows: English, Mathematics (3 papers), Biology (Botany and Zoology), a language, and a fifth subject which should be Chemistry or Physics.

The programme for the degree is as follows:

(a) The Major

COURSE IN BOTANY

BIOLOGY 2—*General Botany*

3—*General Zoology*

11—*Phanerogamic Botany*

12—*Cryptogamic Botany*

13—*Plant Pathology* or

BACTERIOLOGY 10—*Introductory Bacteriology*

BIOLOGY 21—*Plant Physiology*

31—*Plant Ecology*

45—*Genetics*

R1—*Biological Theories*

R2—*General Physiology*

R3—*Botany*

Biology

COURSE IN ZOOLOGY

- BIOLOGY 2—*General Botany*
3—*General Zoology*
16—*Comparative Vertebrate Anatomy*
17—*Invertebrate Zoology*
18—*Entomology*
19—*Economic Vertebrate Zoology*
36—*Animal Ecology*
45—*Genetics*
- PHYSIOLOGY 10—*Animal Physiology*
- BIOLOGY R1—*Biological Theories*
R2—*General Physiology*

(b) The Minor

- CHEMISTRY 1—*General Chemistry*, unless the candidate has Grade XIII standing in Chemistry
2—*General Chemistry*
12—*Organic Chemistry*
- PHYSICS 1—*Mechanics, properties of matter, heat, wave motion, sound, light, electricity, and magnetism*, unless the candidate has Grade XIII standing in Physics.
2—*Light, electricity and magnetism* or
- BIOCHEMISTRY 16—*Introduction to Biochemistry*

(c) General courses to complete the work for degree:

ENGLISH 2, PHILOSOPHY 1, a language. If the candidate has Grade XIII standing in a language he may take a free option as the third general course.

(d) Two general examinations in Biology.

Note:—In special cases and with the consent of the department a slight variation in the Major from that listed above may be made.

For information about the General Honours Course in Science for Teachers and the Course of study leading to the Interim High School Assistant's Certificate, Type A, in Science at the Ontario College of Education see page 98. Both the Course in Botany and the Course in Zoology as outlined above comply with the academic requirements, provided that Physics 2 is included in the programme.

For information about scholarships see page 51.

When Biology is the minor associated with Chemistry as major, the minor consists of BIOLOGY 2 (*General Botany*), BIOLOGY 3 (*General Zoology*), BIOLOGY 21 (*Plant Physiology*), PHYSIOLOGY 10 (*Animal Physiology*), and PHYSICS 1 (*Mechanics, properties of matter, heat, wave motion, sound, light, electricity, and magnetism*) unless the candidate has Grade XIII standing in Physics.

When Biology is the minor associated with Physics as major, the minor consists of BIOLOGY 2 (*General Botany*), BIOLOGY 3 (*General Zoology*), BIOLOGY 45 (*Genetics*), PHYSIOLOGY 10 (*Animal Physiology*).

When Biology is the minor associated with Psychology as major, the minor consists of BIOLOGY 3 (*General Zoology*), BIOLOGY 16 (*Comparative Vertebrate Anatomy*), BIOLOGY 19 (*Economic Vertebrate Zoology*) or BIOLOGY 45 (*Genetics*), and PHYSIOLOGY 10 (*Animal Physiology*).

COURSES OF INSTRUCTION

BIOLOGY 1. *General Biology*.

A scientific study of plants and animals. The subject is treated in a comprehensive way with emphasis upon generalizations and principles. Laboratory study of examples.

Text-book: Villee, *Biology* 3rd ed. (Saunders).

Lectures—Monday, Wednesday, Friday at 8

Laboratory—Monday or Wednesday, 1.30-3.30

Professors EARL and VALLENTYNE

BIOLOGY 2. *General Botany*.

The fundamental facts and principles of plant life. A careful study of form, structure and reproduction of representatives of the principal groups. Attention is given to life processes, particularly in the higher plants.

Prerequisite: BIOLOGY 1.

Text-book: Fuller and Tippo, *College Botany* (Holt).

Lectures—Tuesday and Thursday at 11

Laboratory—Tuesday, 1.30-4.30

Professor KROTKOV

BIOLOGY 3. *General Zoology*.

An introduction to the various divisions of Zoology: form, function, variation and ecology. Laboratory study to supplement the lectures and provide experience in observation and dissection.

Prerequisite: BIOLOGY 1.

Text-book: T. I. Storer, *General Zoology* (McGraw-Hill).

Lectures—Tuesday and Thursday at 8

Laboratory—Monday or Wednesday, 1.30-4.30

Professor DENYES

Biology

BIOLOGY 11. *Phanerogamic Botany.*

Taxonomy, morphology, life histories and evolution of seed plants. Special attention is given to representatives of the local flora. *Offered in 1958-9 but not in 1957-8.*

Prerequisite—BIOLOGY 2. Text-books: Esau, *Plant Anatomy* (Wiley); Core, *Plant Taxonomy* (Prentice-Hall).

Lectures—Tuesday and Thursday at 11

Laboratory—Thursday, 1.30-4.30

Professor EARL

BIOLOGY 12. *Cryptogamic Botany.*

The lower plants treated as described for the seed plants in Biology 11. A collection of 50 properly identified cryptogams must be submitted as a part of this course. Advice on the making of a suitable collection should be sought in the spring preceding enrollment in the course.

Offered in 1957-58 but not in 1958-59.

Prerequisite—BIOLOGY 2.

Hours to be arranged.

Professor GOOD

BIOLOGY 13. *Plant Pathology.*

A study of representative bacterial, fungous, and virus diseases of plants, with emphasis on host-parasite relations, and the influence of environment on disease development. *Offered in 1958-9, but not in 1957-8.*

Prerequisite—BIOLOGY 2. Text-book: Walker, *Plant Pathology* (McGraw-Hill).

Lectures—Tuesday and Thursday at 10

Laboratory—Hours to be arranged.

BIOLOGY 16. *Comparative Vertebrate Anatomy.*

A course dealing with evolution of body form and organ systems in the Phylum Chordata. Attention is given to the behaviour and ecology of vertebrates.

Prerequisite—BIOLOGY 3. Text-book: Newman, *The Phylum Chordata* (Macmillan).

Lectures—Hours to be arranged

Laboratory—Friday 1.30-4.30.

Offered in 1957-58 but not in 1958-59.

Professor DENYES

BIOLOGY 17. *Invertebrate Zoology.*

A survey of representatives of the more important groups of invertebrates with reference to anatomy, taxonomy and life histories. Particular emphasis is given to phylogeny, and attention is directed to those forms which are of importance to man.

Prerequisite—BIOLOGY 3, or equivalent. Text-books: Bullough, *Practical Invertebrate Anatomy* (Macmillan); Buchsbaum, *Animals without Backbones* (Penguin).

Lectures—Tuesday and Thursday at 9

Laboratory—Wednesday, 1.30-4.30

Professor WEST

BIOLOGY 18. *Entomology.*

A survey of insects: morphology and internal anatomy, physiology and ecology, life history, habits and control of representatives of the more important orders

and families. Particular emphasis is given to structure in relation to function and to the relation of the organism to its environment.

Prerequisite—BIOLOGY 17.

Text-books: Essig, *College Entomology* (Macmillan); Ross, *A Text-book of Entomology* (Wiley); Metcalf and Metcalf, *A Key to the Principal Orders and Families of Insects*.

Lectures—Tuesday and Thursday at 11

Laboratory—Tuesday, 1.30-4.30

Professor WEST

BIOLOGY 19. *Economic Vertebrate Zoology.*

A study of the more important vertebrate animals from an economic aspect such as commercial and game fishes, migratory waterfowl and game birds, significant fur-bearing animals. Emphasis is placed on conservation methods.

Prerequisite—BIOLOGY 3.

Lectures—Monday, Wednesday, Friday at 9

Professor CURRAN

BIOLOGY 21. *Plant Physiology.*

A general study of the following topics: carbon and nitrogen metabolism, respiration, nutrition, permeability, water-relations and growth.

Prerequisites—BIOLOGY 2, CHEMISTRY 12. Text-book: Meyer and Anderson, *Plant Physiology* (Van Nostrand).

Lectures—Tuesday and Thursday at 8

Laboratory—Monday 1.30-4.30

BIOLOGY 31. *Plant Ecology.*

A study of the origin and development of plant associations in relation to environment. The relations of plants to latitude, altitude, climate, and other distributive factors. Ecological anatomy. Laboratory and field work. *Offered in 1957-8 but not in 1958-9.*

Prerequisite—BIOLOGY 2. Text-books: Weaver and Clements, *Plant Ecology*, 2nd edition (McGraw-Hill); James, *A Geography of Man* (Ginn).

Professor EARL

BIOLOGY 36. *Animal Ecology.*

A study of the following topics: populations, behaviour, environmental physiology, paleoecology.

Prerequisites—BIOLOGY 3, CHEMISTRY 2. Text-book: Odum, *Fundamentals of Ecology* (Saunders).

Lectures—Wednesday and Friday at 10

Laboratory—Hours to be arranged

Offered in 1958-9 but not in 1957-8.

Professor VALLENTYNE

BIOLOGY 45. *Genetics.*

The principles of genetics; exercises on variation and heredity in plants and animals; genetics and evolution.

Text-book: Sinnott, Dunn, Dobzhansky, *Principles of Genetics* (McGraw-Hill).

Offered in 1958-9 but not in 1957-8.

Lectures—Monday, Wednesday, Friday at 9

Professor DENYES

Chemistry

Reading Courses

BIOLOGY R1. *Biological Theories.*

Shull, *Evolution*, rev. ed. (McGraw-Hill); Darwin, *On the Origin of Species*; Singer, *A Short History of Biology* (Oxford); Darlington, *The Facts of Life* (Allen and Unwin); Gabriel and Fogel, *Great Experiments in Biology* (Prentice-Hall).

Professor EARL

BIOLOGY R2. *General Physiology.*

L. V. Heilbrun, *An Outline of General Physiology* (Saunders Co.); B. T. Scheer, *Comparative Physiology* (John Wiley and Sons); N. A. Maximov, *Plant Physiology* (McGraw-Hill).

Professor KROTKOV

BIOLOGY R3. *Botany.*

A list of readings is to be obtained from the instructor.

Professor GOOD

BIOLOGY R4. *Entomology.*

A list of reading material may be obtained from the instructor. Available by special arrangement and with the approval of the department. Several options are available.

Professor WEST

With the consent of the department, a thesis may be substituted for either BIOLOGY R2 or R3 but not for R1. Application for permission to do this must be made to the department within two weeks of the opening of the fall term.

GRADUATE COURSES

For information about graduate courses in Biology, see the *Calendar of Graduate Studies*.

Chemistry

G. B. FROST, B.A., Ph.D., *Professor*

L. A. MUNRO, M.A., Ph.D., F.R.S.C., F.C.I.C., *Professor*
(on leave, 1957-8)

J. K. N. JONES, Ph.D., D.Sc., F.R.S., *Chown Science Research Professor*

R. L. DORRANCE, M.A. *Professor*

W. M. SMITH, B.Sc., Ph.D., F.C.I.C. *Associate Professor*

R. Y. MOIR, M.A., Ph.D., *Associate Professor*

K. E. RUSSELL, M.A., Ph.D., *Assistant Professor*

R. C. WHEELER, M.Sc., Ph.D., *Assistant Professor*

W. G. BRECK, M.Sc., Ph.D., *Assistant Professor*

R. A. STAIRS, M.Sc., Ph.D., *Lecturer*

R. C. B. WILKIE, B.Sc., Ph.D., *Sessional Lecturer*

Grade XIII standing in Chemistry or CHEMISTRY 1 is required for admission to CHEMISTRY 2, and CHEMISTRY 2 is prerequisite to all other courses in Chemistry. Candidates should not attempt CHEMISTRY 1 unless they have taken Junior Matriculation Chemistry.

Candidates offering Chemistry as one of the subjects of concentration on the General Course take CHEMISTRY 1 (*General Chemistry*), CHEMISTRY 2 (*General Chemistry*), CHEMISTRY 11 (*Analytical Chemistry*), if they have not included Chemistry in their Grade XIII programme; CHEMISTRY 2, 11, 12 (*Organic Chemistry*), if they have offered Chemistry of Grade XIII as one of the subjects for admission. Candidates for the General B.A. degree are not ordinarily admitted to honours courses other than CHEMISTRY 11 and 12 but exceptions may be made if they have satisfactory standing in CHEMISTRY 2, 11 and 12.

THE HONOURS COURSE IN CHEMISTRY

Candidates planning to take the Honours Course in Chemistry should offer Grade XIII subjects as follows:

- (a) Chemistry Major with a minor in Biology, Physics, Geology or Mathematics: English, Mathematics (3 papers), Physics, Chemistry and a language.

The programme for the degree is as follows:

- (a) The Major

CHEMISTRY 2—*General Chemistry*
 11—*Analytical Chemistry*
 12—*Organic Chemistry*
 14—*Physical Chemistry*
 16—*Valency and Molecular Structure*
 22—*Advanced Organic Chemistry*
 24—*Advanced Physical Chemistry*

Two of CHEMISTRY 17—*Industrial Chemistry*

21—*Colloid and Surface Chemistry*
 25—*Electrochemistry*

Reading Course—CHEMISTRY R1

MATHEMATICS 2—*Differential and Integral Calculus*

- (b) The Minor: One of

PHYSICS 2, 11, 13b, 14a and MATHEMATICS 13 (if Physics has not been included in the Grade XIII programme the candidate must complete PHYSICS 1 before registering in PHYSICS 2).

BIOLOGY 2, 3, 21, PHYSIOLOGY 10: and PHYSICS 1 unless Physics has been taken as one of the subjects of Grade XIII.

GEOLOGY 1, 2, 3a, 11, 12, 13a

MATHEMATICS 3, 10, 13, 19 or PHYSICS 2.

A candidate who wishes to take some other subject as a minor, may do so with consent of the Department of Chemistry.

Chemistry

- (c) General courses to complete the work for degree:
 With Physics, Mathematics, or Biology as minor: ENGLISH 2, PHILOSOPHY 1, an option (GERMAN A is recommended). With Geological Sciences as minor: ENGLISH 2, PHILOSOPHY 1.
- (d) Two general examinations in Chemistry
 The following programmes illustrate how these courses may be planned to avoid conflicts and satisfy prerequisites.

YEAR	PHYSICS MINOR	BIOLOGY MINOR	GEOLOGY MINOR	MATHEMATICS MINOR
1	Chemistry 2 Philosophy 1 Mathematics 2 English 2 Physics 2	Chemistry 2 Philosophy 1 Mathematics 2 English 2 Biology 2	Chemistry 2 Philosophy 1 Mathematics 2 English 2 Geology 1	Chemistry 2 Philosophy 1 Mathematics 2 English 2 Mathematics 3
2	Chemistry 11 Chemistry 12 Mathematics 13 Physics 11 Option	Chemistry 11 Chemistry 12 Biology 3 Physics 1 (if required) or Option	Chemistry 11 Chemistry 12 Chemistry 16 Geology 2 Geology 3a	Chemistry 11 Chemistry 12 Mathematics 10 Mathematics 13 Physics 2 or Option
3	Chemistry 14 Chemistry 16 Chemistry 22 Physics 14a, 13b Reading Course	Chemistry 14 Chemistry 16 Chemistry 22 Biology 21 Reading Course	Chemistry 14 Chemistry 22 Geology 11 Geology 12 Geology 13a Reading Course	Chemistry 14 Chemistry 16 Chemistry 22 Mathematics 19 or Option Reading Course
4	Chemistry 24 <i>Two of</i> Chemistry 17 Chemistry 21 Chemistry 25	Chemistry 24 Physiology 10 <i>Two of</i> Chemistry 17 Chemistry 21 Chemistry 25	Chemistry 24 <i>Two of</i> Chemistry 17 Chemistry 21 Chemistry 25	Chemistry 24 <i>Two of</i> Chemistry 17 Chemistry 21 Chemistry 25

When Chemistry is the minor associated with Biology as major, the minor consists of CHEMISTRY 2 (General Chemistry), CHEMISTRY 12 (Organic Chemistry), BIOCHEMISTRY 16 (Introduction to Biochemistry), and PHYSICS 1 (Mechanics, properties of matter, heat, wave-motion, sound, light, electricity and magnetism) unless Physics has been offered as a subject of Grade XIII. When Chemistry is the minor associated with Physics, Geological Sciences or Mathematics as major, the minor consists of CHEMISTRY 2, 11, 12, 14.

Students taking Honours in Chemistry must consult the Head of the Department after they have passed CHEMISTRY 2.

Students taking Chemistry as the major are advised to include German A in their Course. This is of particular importance to those who plan to proceed to graduate work.

For information about the General Honours Course in Science for Teachers and the course of study leading to the Interim High School Assistant's Certificate, Type A, in Science at the Ontario College of Education, see page 100. For information about scholarships in Chemistry, see pages 52-53.

COURSES OF INSTRUCTION

CHEMISTRY 1. *General Chemistry.*

The fundamental theories, laws and principles of chemistry are discussed and applied in the study of the principal non-metals and some of the more important metals and their compounds.

The students entering on this course should already have passed Junior Matriculation Chemistry.

Text-books to be announced.

Lectures—Tuesday, Thursday, Saturday at 10

Laboratory—Thursday, 1.30-3.30

CHEMISTRY 2. *General Chemistry.*

The laws and theories of chemistry with attention to both their qualitative and quantitative applications. The chemistry of the principal non-metals and metals and their more important classes of compounds. In the laboratory illustrative quantitative and qualitative exercises will be performed. The student will be expected to work each week a set of assigned problems.

A more detailed and advanced course in general chemistry than CHEMISTRY 1. It will be open only to those who have passed CHEMISTRY 1 or who have standing in Grade XIII Chemistry or its equivalent.

Text-books: Sisler, Vander Werf, Davidson, *General Chemistry* (Macmillan); Morton, Clippinger, Eblin, *A Laboratory Program for General Chemistry* (Houghton-Mifflin); Dorrance, *Experiments and Problems in General Chemistry* (Technical Supplies).

Lectures—Wednesday and Friday at 10; Thursday at 8 (first term) Tuesday at 8 (second term)

Laboratory—Thursday, 2.30-4.30

Professor SMITH

CHEMISTRY 11. *Analytical Chemistry.*

An elementary course designed to illustrate the theories and procedures in Qualitative and Quantitative analysis.

Text-book: Curtman, *Semimicro Qualitative Analysis* (Macmillan). Reference

Chemistry

Texts: Treadwell and Hall, *Analytical Chemistry*, Vol. I (Wiley). Engelder, *Calculations of Qualitative Analysis* (Wiley). Dorrance, *Procedures and Problems in Quantitative Analysis* (Technical Supplies).

Lectures—Tuesday and Thursday at 11

Laboratory—(Qualitative) Wednesday, 1.30-4.30

(Quantitative) Thursday, 1.30-4.30

Professors MUNRO and DORRANCE

CHEMISTRY 12. *Organic Chemistry.*

An introductory course on the chemistry of the compounds of carbon. The principal classes of aliphatic and aromatic compounds are studied to illustrate both their theoretical and practical importance. In the laboratory a number of organic compounds are prepared to illustrate typical operations employed in organic chemistry.

Prerequisite—CHEMISTRY 2 with a minimum of 62 per cent, or CHEMISTRY 2 and 11. Students in Biology and Biochemistry taking Chemistry as minor may take CHEMISTRY 11 and 12 in the same year. Text-books: Lecture text-book to be announced; Adams and Johnson, *Laboratory Experiments in Organic Chemistry*, 4th edition (Macmillan).

Lectures—Wednesday and Friday at 11

Laboratory—Monday 1.30-4.30, or Tuesday 1.30-4.30, or Friday 1.30-4.30

CHEMISTRY 14. *Physical Chemistry.*

The ideal gas law; actual gases and equations of state; the liquid state and vapor pressure; the ideal solution; deviations from ideality, azeotropes, fractionation; dilute solutions; the nature of ionic crystals and electrolytic solutions; thermodynamic functions, energy, enthalpy, entropy and free energy; the equilibrium constant; heterogeneous equilibria; rates of chemical processes.

Prerequisites—CHEMISTRY 1, 2, 11 and MATHEMATICS 2.

Text-book: Glasstone, *Elements of Physical Chemistry* (Van Nostrand).

Lectures—Tuesday and Thursday at 9

Laboratory—Tuesday, 1.30-4.30

Professor FROST

CHEMISTRY 16. *Valency and Molecular Structure.*

An outline of modern concepts of atomic structure; the periodic table; the nature of the covalent, electrostatic and metallic bond; the formal rules of covalent bond formation: Werner complexes, crystal structure, oxidation—reduction and acid-base reactions: the application of modern concepts of the nature of the chemical bond to systematic inorganic chemistry. A brief consideration of the nature of the atomic nucleus, nuclear transformations, and the source of atomic energy is also given.

Text-book: Cartmell and Fowles, *Valency and Molecular Structure*.

Lectures—Wednesday and Friday at 9.00

Laboratory—Wednesday or Friday, 1.30-4.30

Professor RUSSELL

CHEMISTRY 17. *Industrial Chemistry.*

The lectures deal with the following topics: the characteristics and production of solid, liquid, and gaseous fuels; water purification and treatment; the petroleum industry; sulphuric, nitric and hydrochloric acids; fertilizers; alkali; artificial fibres and the manufacture of wood pulp and paper. In the laboratory

the following processes are carried out: the catalytic production of sulphuric acid, nitric acid and formaldehyde; water analysis and methods of industrial softening are studied. The Solvay process for the manufacture of sodium bicarbonate is studied as well as the Deacon reaction for the production of chlorine. An introductory training is given in the preparation of urea-formaldehyde resins.

Prerequisites—CHEMISTRY 1, 2, 11, 12 and PHYSICS 1. CHEMISTRY 17 and 12 may be taken in the same year. Text-book: Shreve, *Chemical Process Industries* (McGraw-Hill).

Lectures—Tuesday and Thursday at 10, in Gordon Hall

Laboratory—Monday, 1.30-4.30, in Gordon Hall

Department of Chemical Engineering

Not offered in 1957-58

CHEMISTRY 21. *Colloid and Surface Chemistry.*

The lectures deal with the general properties of colloids, polymerization, gels, thermo-plastic and thermo-setting resins, ion exchange, elastomers, sorption, and catalysis. The laboratory work is illustrative of the topics dealt with in lectures and includes experiments on colloidal preparations, dialysis, pore size of membranes, relative and intrinsic viscosity, surface tension, molecular films, electrical properties, adsorption, foams, emulsions, gels, etc.

Prerequisites—PHYSICS 1 and CHEMISTRY 1, 2, 11, 12 and 14. Text-book: Hartman, *Colloid Chemistry*, (Houghton-Mifflin). Reference texts: Alexander, *Colloid Chemistry*, Vols. I-VII (Chem. Catalogue Co.); Lewis, Squires and Broughton, *Colloid and Amorphous Materials* (Macmillan).

Lectures—Wednesday and Friday at 10, first term;

Monday, Wednesday, Friday at 11, second term

Laboratory—Tuesday, 1.30-4.30, first term

CHEMISTRY 22. *Advanced Organic Chemistry.*

The principal reactions used in synthetic organic chemistry with practical illustrations in the laboratory. The more detailed chemistry of the aliphatic and aromatic series of the simpler types of heterocyclic compounds. Laboratory practice in qualitative and quantitative organic chemistry and organic preparations.

Prerequisites—CHEMISTRY 1, 2, 11, 12, 14; but CHEMISTRY 22 and CHEMISTRY 14 may be taken in the same year. Text-books: Fieser and Fieser, *Organic Chemistry* (Heath); Turner and Harris, *Organic Chemistry* (Longmans); Adams and Johnson, *Laboratory Experiments in Organic Chemistry* (Macmillan).

Lectures—Tuesday and Thursday at 11

Laboratory—Monday 1.30-4.30, or Tuesday 1.30-4.30, or Friday 1.30-4.30 or Saturday 9-12

CHEMISTRY 24. *Advanced Physical Chemistry.*

The greater part of this course is taken up with a detailed treatment of the principles of chemical thermodynamics and their application to the chemical processes. Some consideration, however, is given to the kinetic approach to chemical phenomena, and to molecular structure. The laboratory work consists of

Classics

equilibrium and rate studies. Several laboratory periods are used for the mathematical computation of fugacities, activities, and free energies, and for the thermodynamic calculation of yields in industrial processes.

Prerequisites—CHEMISTRY 1, 2, 11, 12, 14. Text-book: Glasstone, *Thermodynamics* (Van Nostrand).

Lectures—Tuesday and Thursday at 10

Laboratory—Thursday, 1.30-4.30

Professor FROST

CHEMISTRY 25. *Electrochemistry*.

A discussion of the fundamentals of electrochemistry and their application to chemical analysis. The laboratory work includes electrolytic preparations, electrical measurements of the properties of solutions and electrometric titrations.

Prerequisites—CHEMISTRY 1, 2, 11, 12, 14. Text-book: Glasstone, *Introduction to Electrochemistry* (Van Nostrand).

Lectures—Monday at 10, Tuesday at 8 (first term); Thursday at 8 (second term)

Laboratory—Wednesday, 1.30-4.30

Professor SMITH

Reading Course

CHEMISTRY R1. *Descriptive and Theoretical Inorganic Chemistry*.

Reading to be assigned.

The Staff

GRADUATE COURSES

For information about graduate courses in Chemistry, see the *Calendar of Graduate Studies*.

Classics

H. L. TRACY, B.A., Ph.D., *Professor*

S. E. SMETHURST, M.A., *Professor*

LENORE BROCKMEIER, B.A., *Lecturer*

CLASSICAL LITERATURE

COURSE OF INSTRUCTION

CLASSICAL LITERATURE 1.

A general course open to those who wish to study in English translations the literature of Greece and Rome.

Prescribed Texts: Homer, *Iliad and Odyssey*, E. V. Rieu (Penguin Books); *Fifteen Greek Plays*, Cooper (Oxford University Press); *The Aeneid of Vergil*, C. Day Lewis (Doubleday). Reference Books: 1. MYTHOLOGY: Bianchi, *The Mythology of Greece and Rome*; Bullfinch, *Mythology*. 2. EPIC: Vergil, *Aeneid*, Mackail. 3. DRAMA: Plautus (Loeb, vol. 2). 4. SATIRE: Herodas, Juvenal (Loeb). 5. ROMANCES: Longus, Achilles Tatius (Loeb). 6. BIOGRAPHY: *Socratic Discourses* (Everyman); Plutarch, *Lives* (Everyman, vol. 3); Suetonius (Loeb). 7.

LITERARY CRITICISM: Horace, *Satires*, etc. (Loeb); *Aristotle on the Art of Poetry*, Cooper (Harcourt, Brace and Co.). 8. GENERAL: *History of Ancient Greek Literature*, Murray; *Latin Literature*, Mackail. Reference books are available to extramural students through the university library.

Lectures—Tuesday, Thursday, Saturday at 9

Professor TRACY

For information about scholarships, see pages 53-54.

GREEK LANGUAGE AND LITERATURE

Liddell and Scott's *Greek Dictionary* (abridged edition) is recommended. A *Greek Grammar*, preferably that of Goodwin and Gulick, or Smyth, is necessary.

GREEK A may be counted towards a degree under conditions specified in sections 8 and 9, GENERAL REGULATIONS. Under these regulations students who enter the University without matriculation in Greek, and who wish to specialize in this subject, may complete this programme of work in the usual time by taking GREEK A in their first winter session and GREEK 1 in the following summer.

Students offering Greek as one of the subjects of concentration on the General Course may make up groups of three, four or five courses by taking GREEK A and 1, or GREEK 1 and 2, or GREEK 2 and 10 and one, two, or three other courses selected from GREEK 11, GREEK 21, CLASSICAL LITERATURE 1, ANCIENT HISTORY 4. Groups in classical civilization may be made up of three or four courses selected from CLASSICAL LITERATURE 1, ANCIENT HISTORY 4, 51, HISTORY 12.

THE HONOURS COURSE IN GREEK

Candidates planning to take the Honours Course in Greek are advised to offer Grade XIII subjects as follows: English, Latin, Greek, a science, and a fifth subject which may be a third language, a second science or History.

The programme for the degree is as follows:

(a) The Major

- GREEK 2—*Translation and Prose Composition*
- 10—*Epic Poetry, Oratory*
- 11—*Historians, Comedy*
- 21—*Tragedy, Minor Dialogues of Plato*
- 26—*History of Ancient Philosophy*

ANCIENT HISTORY 4—*A Survey of Greek and Roman Society*

With LATIN 12 (*Vergil*) and ANCIENT HISTORY 51 (*Advanced Greek and Roman History*) if Latin is the minor.

Classics: Greek

Reading Courses

CLASSICS R1—*Greek and Roman Literature*, and topics selected from religion, art, social life; and

CLASSICS R2—*Life and Letters in the Early Empire*; or

CLASSICS R3—*Classical Tragedy*; and

CLASSICS R4—*The Odyssey of Homer*.

GREEK 2 and 10 (or 11) should be taken in the same session. CLASSICS R1 should be taken as the first reading course, and as early as possible.

(b) The Minor

LATIN 2, 12 or 13, 20, and 30; or

PHILOSOPHY 1, 10, 27 and two advanced courses. (See page 169)

A candidate who wishes to take some other subject as minor may do so with the consent of the Department of Classics.

(c) General courses to complete the work for the degree. With Latin as minor: ENGLISH 2, PHILOSOPHY 1, a science. If the candidate has Grade XIII standing in a science he may take a free option as the third general course. With Philosophy as minor: ENGLISH 2, a science. If the candidate has Grade XIII standing in a science he may take a free option as the second general course.

(d) Two general examinations in Greek.

A minor in Greek normally consists of GREEK 2, 10, 11, and 21, or, when Latin is not the major, ANCIENT HISTORY 4.

Candidates for admission to the course of study leading to the Interim High School Assistant's Certificate, Type A, in Classics at the Ontario College of Education take the regular Honours degree Course in Latin and Greek, or Greek and Latin.

For information about scholarships in Greek see page 54.

COURSES OF INSTRUCTION

GREEK A. *For Beginners.*

Text-books: Alston Chase and Henry Philips, Jr., *A New Introduction to Greek* (Technical Supplies); Goodwin and Gulick, *Greek Grammar* (Ginn).

Lectures—Monday at 1.30; Tuesday, Thursday, Saturday at 9

GREEK 1. *Translation and Prose Composition.*

Text-books: Freeman and Lowe, *Greek Reader* (Oxford, Clarendon Press); Page, *The Acts of the Apostles*; North and Hillard, *Greek Prose Composition* (Rivington's).

Lectures—Monday, Wednesday, Friday at 8

Professor SMETHURST

GREEK 2. *Translation and Prose Composition.*

Text-books: Plato, *Apology*, Adam (Cambridge); Plato, *Crito*, Adam (Cambridge); *Greek New Testament*.

Hours to be arranged

Professor TRACY

GREEK 10. *Epic Poetry, Oratory.*

Text-books: Demosthenes, *Olynthiacs*, Abbott and Matheson (Oxford, Clarendon Press); Lysias, *XVI Orations*, Shuckburgh (Macmillan); Isocrates (text to be arranged); Homer, *Iliad I-XII*, Merry (Oxford, Clarendon Press); Goodwin and Gulick, *Greek Grammar* (Ginn).

Hours to be arranged

Professor TRACY

GREEK 11. *Historians, Comedy.*

Text-books: Thucydides, Books I and II, Marchant (Macmillan); Aristophanes, *Acharnians*, and *Clouds*, Merry (Oxford, Clarendon Press).

Not offered in 1957-8

GREEK 21. *Tragedy, Minor Dialogues of Plato.*

Text-books: Sophocles, *Antigone*, Jebb (abridged edition; Cambridge, Pitt Press.) A prescription of reading from Plato will be arranged.

Hours to be arranged

Professor SMETHURST

GREEK 26.

A history of ancient philosophy and the development of modern thought. This course is for the current session the same as PHILOSOPHY 12 and will be given by the Department of Philosophy.

Prerequisite—PHILOSOPHY 1

Reading Courses

Students are urged to cover as much as possible of their reading courses during the long vacation.

CLASSICS R1. *Greek and Roman Literature, and topics selected from Religion, Art, Social Life.*

All students must prepare themselves in Greek and Latin Literature. One or two additional topics are to be chosen. A full bibliography cannot be given here. The basic books in the various fields are listed; others will be recommended to students when they have chosen their special topics. Literature: Croiset, *Abridged History of Greek Literature*; Mackail, *Latin Literature*. Religion: Moore, *The Religious Thought of the Greeks*; Bailey, *Phases in the Religion of Ancient Rome*. Art: P. Gardner, *Principles of Greek Art*; Walters, *The Art of the Romans*. Social Life: Glotz, *Ancient Greece at Work*; Warde Fowler, *Social Life at Rome*.

CLASSICS R2. *Life and Letters in the Early Empire.*

Tacitus, *Annals*, XIII, XIV (Furneaux, Oxford University Press); Juvenal, *Satires*, 1, 3, 5, 7; Pliny's Letters, in *Selected Letters of Pliny*, Prichard and Bernard (Oxford, Clarendon Press). The above are to be supplemented by readings in the following books: Charlesworth, *The Roman Empire*; Dill, *Roman Society from Nero to Marcus Aurelius*.

Classics: Ancient History

CLASSICS R3. *Classical Tragedy.*

Aeschylus, *Agamemnon*; Sophocles, *Oedipus Tyrannus**; Euripides, *Hippolytus*, *Medea**, Seneca, *Oedipus*, *Phaedra*; Corneille, *Médée* or *Oedipe*; Racine, *Andromaque*, *Phèdre*; Voltaire, *Oedipe*, *Oreste*; Dryden, *Oedipus*.

Sheppard, *Greek Tragedy*; Murray, *Ancient Greek Literature*; Lucas, *Seneca and Elizabethan Tragedy*; Wright, *French Classicism*; de Julleville, *Le Théâtre en France*; Faguet, *Propos de Théâtre*, essays on Racine in vols. 1 and 3; Vaughan, *Types of Tragic Drama*; Lucas, *Tragedy*; Nettleton, *English Drama of the Restoration and Eighteenth Century*; *Cambridge History of English Literature*, vol. VIII, the relevant chapters.

Classics students will read the plays marked * in Greek. Latin-French students will select for reading in the original any two of the French plays listed above. The remainder, in each case, will be studied in translations.

CLASSICS R4. *The Odyssey of Homer.*

Homer, *Odyssey*, ed. W. W. Merry (2 vols., Oxford, Clarendon Press); Victor Bérard, *Did Homer Live?*; R. C. Jebb, *Homer: An Introduction to the Iliad and the Odyssey*; T. D. Seymour, *Life in the Homeric Age*.

ANCIENT HISTORY

COURSES OF INSTRUCTION

ANCIENT HISTORY 4. *A Survey of Greek and Roman Society.*

An introductory account of Greek and Roman political and social development; the period from the rise of the Greek city-states to the death of Constantine will be studied and the student will be expected to pay particular attention to those aspects of Greek and Roman society which are most important for an appreciation of modern ideas and institutions. Since it is impossible to cover the whole period in detail, special attention will be given in alternate years to Greece and Rome. In 1957-8 the special study will be Rome.

Text-books: Trever, *History of Ancient Civilization*, 2 vols. (Harcourt, Brace); Thucydides, *History of the Peloponnesian War* (Everyman). Students will also be provided with an outline guide to Greek and Roman history prepared by the Department.

Certain other works dealing with special problems or aspects of Greek and Roman History will be available to extramural students through the lending facilities of the university library.

Lectures—Tuesday, Thursday, Saturday at 11

Professor SMETHURST

ANCIENT HISTORY 51. *Advanced Greek and Roman History.*

Advanced study of certain problems in Greek and Roman History, such as the growth of the city-state, the development of Athenian democracy, the rise of federalism, the collapse of the Roman Republic. The course will be adapted as far as possible to suit the interests of individual students.

Prerequisite—ANCIENT HISTORY 4.

Professor SMETHURST

For information about scholarships in Ancient History, see page 54.

LATIN LANGUAGE AND LITERATURE

For the general classes, Lewis's *Latin Dictionary for Schools* (Oxford University Press) is recommended, or Lewis's *Elementary Latin Dictionary* (Oxford University Press). Honours students must provide themselves with Lewis and Short's *Latin Dictionary* (Oxford University Press), and Allen and Greenough's *New Latin Grammar* (Ginn and Co.).

LATIN 2 is prerequisite to all other courses in Latin.

Students offering Latin as one of the subjects of concentration on the General Course may make up groups of three, four or five courses by taking LATIN 1 and 2, or LATIN 2 and 12, or 13, and one or two courses selected from LATIN 12 or 13, LATIN 20, CLASSICAL LITERATURE 1, ANCIENT HISTORY 4. Groups in classical civilization may be made up of three or four courses selected from CLASSICAL LITERATURE 1, ANCIENT HISTORY 4, 51, HISTORY 12.

THE HONOURS COURSE IN LATIN

Candidates planning to take the Honours Course in Latin are advised to offer Grade XIII subjects as follows: English, Latin, a science, a second language and a fifth subject which may be a third language, a second science or History.

The programme for the degree is as follows:

(a) The Major

- LATIN 2—*Translation and Prose Composition*
- 12—*Vergil*
- 13—*Poets of the Golden Age*
- 20—*Roman Historians, Roman Comedy*
- 30—*Lucretius, Cicero*
- 31

When Greek is the minor, ANCIENT HISTORY 4 and 51 must also be taken; when English is the minor, an honours course in History, and one of FRENCH 2 (Intermediate French), GERMAN 2 (Intermediate German) are required; when French is the minor, an honours course in History, and an honours course in English are required.

Three reading courses: when Greek is the minor, any three; otherwise, CLASSICS R1, R2, and R3.

Classics: Latin

LATIN 2 and 12 (or 13) should be taken in the same session. CLASSICS R1 should be taken as the first reading course, and as early as possible.

(b) The Minor

GREEK 2, 10, 11, 21; or

FRENCH 2, 10, 14, and one further course, or

ENGLISH 2 or 5, 10, any two chosen from 15, 19, 20, 21, 22; or

PHILOSOPHY 1, 10, 27 and two advanced courses (See page 169)

A candidate who wishes to take some other subject as minor may do so with the consent of the Department of Classics.

(c) General courses to complete the work for degree. With Greek or French as minor: ENGLISH 2, PHILOSOPHY 1, a science. If the candidate has Grade XIII standing in a science he may take a free option as the third general course. With English as minor: PHILOSOPHY 1, a science, a free option. If the candidate has Grade XIII standing in a science he may take a free option as the second general course. With Philosophy as minor: ENGLISH 2, a science. If the candidate has Grade XIII standing in a science he may take a free option as the second general course.

(d) Two general examinations in Latin.

A minor in Latin normally consists of LATIN 2, 12 or 13, 20, and 30.

Honours students continue throughout their courses the study of morphology, historical grammar, syntax, prosody and composition. These are part of the prescription for LATIN 12, 13, 20, 30.

For information about courses of study leading to High School Teaching Certificates in Classics, Latin and English, Latin and French, see page 97. For information about scholarships in Latin see page 53.

COURSES OF INSTRUCTION

LATIN 1. *Translation and Prose Composition.*

Text-books: J. M. Milne, *An Anthology of Classical Latin* (Ryerson), Lewis and Goddard, *Foundations for Latin Prose* (Heinemann).

A tutorial period will be given for the benefit of students who desire extra assistance.

Lectures—Monday, Wednesday, Friday at 8

LATIN 2. *Translation and Prose Composition.*

Text-books: Vergil, *Aeneid*, Book VI, Sidgwick (Pitt Press); *A Book of Latin Poetry*, E. V. Rieu, (Methuen); Pliny, *Selected Letters*, Prichard and Bernard, (Oxford Press). Exercises in Latin prose composition will be assigned.

Extramural students should supply themselves with the *Classical Dictionary* in the Everyman series (J. M. Dent) and Wilkins, *Roman Literature* (Literature Primers: Macmillan).

Lectures—Tuesday, Thursday, Saturday at 11

Professor TRACY

LATIN 12. *Vergil*.

History of the Latin Epic. The *Aeneid*. Brief study of the *Eclogues* and *Georgics*.

Text-book: *P. Vergili Maronis Opera*, Sidgwick (Cambridge University Press).

Lectures—Monday, Wednesday and Friday at 8

Professor TRACY

LATIN 13. *Poets of the Golden Age*.

Catullus, Horace, Tibullus, Propertius.

Text-books: *Catullus*, Merrill (Ginn and Co.); *Q. Horati Flacci Opera*, Page, Palmer and Wilkins (Macmillan). *The Roman Elegiac Poets*, Carter (D. C. Heath).

Not offered in 1957-8

LATIN 20. *Roman Historians, Roman Comedy*.

Historians—Livy, Sallust, Cicero; Comedy—Plautus, Terence.

Selected Letters of Cicero, Abbott (Ginn and Co.); Livy, Books XXX-XXXIII, Mendell (Appleton, Century); Sallust, ed. Capes (Clarendon Press); Plautus, *Mostellaria*, Fay (Allyn and Bacon); *The Comedies of Terence*, Ashmore (Oxford University Press).

Not offered in 1957-8.

LATIN 30. *Lucretius, Cicero*.

The theory and practice of rhetoric in Cicero: *Pro Lege Manilia*, *Pro Sestio*, *De Senectute*, *De Amicitia*; Lucretius, *De Rerum Natura*, Books I, III, Duff (Cambridge University Press).

Hours to be arranged

LATIN 31.

Intensive reading in an author chosen by the student, with consultations and research assignments.

GRADUATE COURSES

For information about graduate courses in Classics, see the *Calendar of Graduate Studies*.

Drama

WILLIAM ANGUS, A.M., Ph.D.

Associate Professor and Director of Drama

MARGARET ANGUS, B.A., *Assistant*

The courses in Drama may be counted as a group towards the General B.A. degree or as individual free options towards either the General B.A. or the Honours B.A. On recommendation of the departments concerned, students may apply to the Faculty of Arts for permission to combine courses in Fine Arts (Art, Drama, Music) to make up a group towards the General B.A. DRAMA 1 may be counted as part of a group of four or five in English on the General Course.

DRAMA 1. *The Theatre as an Art Form.*

The aesthetic and practical principles of the theatre in playwriting, directing, acting, and staging, with some practice and experience in the productions of the Drama Guild and a class play.

This course is especially recommended to students intending to become teachers or to engage in social or recreational work.

Basic text: John Gassner, *Producing the Play* (Revised), (Dryden Press or Macmillan, Toronto).

Other reading to be assigned.

Tuesday, Thursday, Saturday at 10

Offered every year.

DRAMA 2. *History of the Theatre I.*

The development of the theatre from primitive rituals to the introduction, in the 17th century, of the proscenium arch type of stage, with a study of plays representative of the historical periods and their methods of production.

Not offered intramurally in 1957-8.

DRAMA 3. *History of the Theatre II.*

The development of the theatre since the introduction of the proscenium arch type of stage to the present day, with a study of plays representative of the various "isms" of the past two centuries.

Basic texts: Kenneth Macgowan and William Melnitz, *The Living Stage*, (Prentice-Hall); W. S. Clark, *Chief Patterns of World Drama* (Houghton Mifflin).

Other reading to be assigned.

Monday, Wednesday, Friday at 11

Offered in 1957-8

English Language and Literature

MALCOLM M. ROSS, M.A., Ph.D., F.R.S.C., *Professor*

CHARLES J. VINCENT, M.A., Ph.D., *Professor*

E. A. WALKER, M.A., *Associate Professor*

GEORGE WHALLEY, M.A., Ph.D., F.R.S.L., *Associate Professor*

J. S. BAXTER, B.A., *Lecturer*

DUNCAN ROBERTSON, M.A., *Lecturer*

W. C. LOUGHEED, M.A., *Lecturer*

ISAAC NEWELL, M.A., *Lecturer*

ENGLISH 2 (*A General Introduction to English Literature*) is required of all candidates for degree.

Students offering English as one of the subjects of concentration on the General Course ordinarily take ENGLISH 2 and two or three of ENGLISH 3 (*The English Novel*), 5 (*The Neo-Classical Age*), 7 (*American and Canadian Literature*). A course in Drama and/or one in Classical Literature may be added to three courses in English to make up a group of four or five courses. Students on the General Course are not ordinarily admitted to Honours courses but exceptions may be made with the consent of the department. Students on the General Course wishing to apply for admission to an Honours Course are advised to consult the head of the department before leaving the University in the previous summer.

Students who intend to enter the Honours Course in English and have at least second class honours in the Grade XIII examinations in English Literature and Composition shall take ENGLISH 2 and 10 (*An Introduction to Honours in English*) in their first year. They must obtain a standing of at least B in ENGLISH 2 and 60% in English 10 if they wish to continue in honours work.

If students without the above-mentioned qualifications wish to enter on an Honours Course they shall take ENGLISH 2, and if they obtain at least B on this course they may proceed in the second year to ENGLISH 10 and 15 (*Shakespeare and the Drama of the Renaissance*).

THE HONOURS COURSE IN ENGLISH

Candidates planning to take the Honours Course in English are advised to offer Grade XIII subjects as follows: English, Latin, a science, a second language and either a third language or History. If Grade XIII Latin has not been taken LATIN 1 must be included in the University programme.

The programme for the degree is as follows:

(a) The Major

ENGLISH 2—*A General Introduction to English Literature*

10—*An Introduction to Honours in English*

LATIN 2—*Translation and Prose Composition*; or

CLASSICAL LITERATURE 1—*The Literature of Greece and Rome**

ENGLISH 14A, 14B—*Old and Middle English*

15—*Shakespeare and the Drama of the Renaissance*

19—*English Literature from 1500 to 1700*

or 21—*English Literature from 1830 to 1880*

20—*English Literature from 1780 to 1830*

22—*English Literature from 1880 to 1940*

Three Reading Courses to be chosen from:

R1—*American and Canadian Literature*

R2—*The Renaissance*

R3—*The Victorian Age* (Not offered in 1957-8)

R4—*The English Novel*

R5—*Literary Criticism*

All candidates must take R1.

(b) The Minor

HISTORY 3 or 5 or 6, 12, 13 or 19 and one other course numbered over 10. The minor in Social History required for the course leading to the Interim High School Teaching Certificate, Type A, in English at the Ontario College of Education is: HISTORY 3 or 5 or 6, 12 and two courses to be selected from 14, 16, 18A, 18B, 19, 20, 24.

FRENCH 2, 10, 14, and one further course.

LATIN 2, 12 or 13, 20, 30.

GREEK 2, 10, 11, 21 or ANCIENT HISTORY 4.

GERMAN 2, 10, 12 and 14.

PHILOSOPHY 1, 10, 27 and two advanced courses (See page 169).

SPANISH 2, 10, 22 or 24, 29 or 30.

* Candidates for admission to the course of study leading to the Interim High School Assistant's Certificate, Type A, in English and French at the Ontario College of Education (see page 97) shall take LATIN 2.

A candidate who wishes to take some other subject as minor, may do so with the consent of the Department of English.

(c) General courses to complete the work for a degree. With History or French or Latin or Greek or German or Spanish as minor: PHILOSOPHY 1, a science, a free option. If the candidate has Grade XIII standing in a science, he may use the second general course as a free option. With Philosophy as minor: a science, two free options. If the candidate has Grade XIII standing in a science he may use the first general course as a free option.

(d) Two general examinations in English.

Except by special permission of the department, students making English their major subject in honours take their courses in the following order: 2, 10; 14A, 14B, 15; 19 or 21, 20; 22, with one reading course in each of the second, third and fourth years. As the Honours Course is planned as a progressive whole it is important that this order be followed.

A minor in English normally consists of ENGLISH 2, 10, and any two chosen from ENGLISH 15, 19, 20, 21, 22.

Students offering English for the General Honours Course take the minor as prescribed in the preceding paragraph together with one reading course.

For information about the requirements for the High School Teaching Certificate in English with a minor in Social History and the certificates in English and Latin, and English and French, Spanish or German, see pages 97-98. For information about scholarships in English see pages 54-56.

COURSES OF INSTRUCTION (GENERAL)

ENGLISH A.

The course consists of two hours of instruction a week, and includes the writing of original passages or essays, précis, and exercises to improve style and expression.

Once a student is enrolled in English A, the course becomes one of the requirements for a degree and must be taken as an extra course in each successive year until passed. Final examinations are given in November, December, and April. A pass is granted only to those students whose class work has been satisfactory.

Prescribed texts: P. S. Grant, F. Bracher, S. E. Duff, *Correctness and Precision in Writing*, Form D (Boston: Houghton Mifflin); Emery and Wight, *Practice in Writing* (New York: Dryden Press).

English

ENGLISH 1. *Prose Composition, with Literary Background.*

A practical course in prose composition, with parallel reading.

Prescribed texts: N. Foerster and J. M. Steadman, *Writing and Thinking* (Boston: Houghton Mifflin; Toronto: Thomas Allen); Dorothy Brewster, *A Book of Modern Short Stories* (Toronto: Macmillan); C. Neider, *Essays of the Masters* (Rinehart). During the session at least one novel, one biography, and one play will be prescribed.

Tuesday, Thursday and Saturday at 8

ENGLISH 2. *A General Introduction to English Literature.*

This course deals with some major works in English literature. It includes the following writers: Chaucer, Shakespeare, Donne, Bacon, Milton, Pope, Swift, Wordsworth, Tennyson, Dickens, Eliot, O'Casey. A detailed list may be obtained from the Department of English or the Registrar's Office. Emphasis is placed also on English composition.

Each student must possess a satisfactory English dictionary, such as *The Concise Oxford*, *The Thorndike-Barnhart Comprehensive Desk Dictionary* or *The American College Dictionary*.

Monday, Wednesday, Friday at 11

Tuesday, Thursday, Saturday at 11

ENGLISH 3. *The English Novel.*

This course deals with the novel as a specific literary form and presents a survey of the novel in England from Henry Fielding to the present day.

Prescribed texts: A list of approximately fifteen novels and recommended auxiliary reading can be obtained from the Department of English or the Registrar's Office. Students intending to take this course are strongly advised to begin reading during the summer.

Tuesday, Thursday, Saturday at 9

Professor ROSS

ENGLISH 5. *The Neo-Classical Age.*

Prescribed text: Bredvold, McKillop, and Whitney, *Eighteenth Century Poetry and Prose* (New York: The Ronald Press).

Monday, Wednesday, Friday at 10

Professor WALKER and Professor WHALLEY

ENGLISH 7. *American and Canadian Literature.*

This course deals with some of the major writers in North American literature. It includes the following: Franklin, The Federalists, Irving, Poe, Haliburton, Emerson, Hawthorne, Thoreau, Melville, Whitman, Crane, Twain, Leacock, Dickinson, Frost, Pratt, and MacLennan. A detailed list may be obtained from the Registrar's Office.

Monday, Wednesday, Friday at 9

Professor VINCENT

COURSES OF INSTRUCTION (HONOURS)

ENGLISH 10. *An Introduction to Honours in English.*

A general study of the history of the English language, of literary forms, and of the fundamental principles of literary criticism. *This course is intended only for those who propose to take Honours in English.*

Prescribed texts: Stuart Robertson, *The Development of Modern English* (Prentice-Hall); *Criticism*, edd. Schorer, Miles and Mackenzie (New York: Harcourt Brace.)

Monday, Wednesday and Friday at 10 Mr NEWELL and Mr LOUGHEED

ENGLISH 14A. *Old English.*

A. J. Wyatt, *The Threshold of Anglo-Saxon* (Cambridge University Press); R. Quirk and C. L. Wrenn, *An Old English Grammar* (London: Methuen and Co.).

ENGLISH 14B. *Middle English.*

A study of the transition writers and of Chaucer's poetry, based on the following works: *The Romaunt of the Rose*, *The Book of the Duchesse*, *The Parlement of Foules*, *Troilus and Criseyde*, *The House of Fame*, *The Prologue to the Legend of Good Women*, *The Canterbury Tales*.

Prescribed texts: *Chaucer's Complete Works*, ed. F. N. Robinson (Boston: Houghton Mifflin); *The Nun's Priest's Tale*, ed. K. Sisam (Toronto: Oxford University Press); Grace Hadow, *Chaucer and His Times*, Home University Library (Toronto: Clarke, Irwin; New York: Henry Holt); B. Dickins and R. M. Wilson, *Early Middle English Texts* (Cambridge: Bowes and Bowes).

Tuesday, Thursday and Saturday at 10 Professor VINCENT

ENGLISH 15. *Shakespeare and the Drama of the Renaissance.*

A study of the range and variety of the English drama from Marlowe, Kyd, and Greene to the closing of the theatres in 1642. Approximately half of the course will be devoted to examining representative plays by Shakespeare.

Prescribed texts: Any available complete edition of the works of Shakespeare; Brooke and Paradise, *English Drama, 1580-1642* (Heath).

Tuesday and Thursday at 4 Mr BAXTER

ENGLISH 19. *English Literature from 1500 to 1700.*

Prescribed texts: Edmund Spenser, *Poems* (Oxford University Press); *The Portable Milton* (New York: Viking Press); *Seventeenth Century Prose and Poetry*, vol. 1 edd. White, Wallerstein and Quintana (Macmillan).

Not offered in 1957-8. Professor ROSS

ENGLISH 20. *English from 1780 to 1830.*

Students are expected to be familiar with the poetry of Wordsworth, Coleridge, Blake, Byron, Shelley, and Keats.

Prescribed texts: Oxford Standard Authors editions of Wordsworth, Coleridge, Shelley, Keats, Byron (Toronto: Oxford University Press).

Monday and Wednesday at 4 Professor WHALLEY

French

ENGLISH 21. *Victorian Literature.*

A study of dominant ideas (social, political, scientific, moral, religious) in their effect on the literature of the Victorian period.

Basic texts: Tennyson, *Poetical Works* (Globe Edition); *Poems of Browning*, (Houghton Mifflin); Matthew Arnold, *The Portable Matthew Arnold* (Viking); Newman, *Apologia Pro Vita Sua* (Houghton Mifflin); Ruskin, *Selections* (Scribner's); Carlyle, *Selections*, ed. A. H. A. Ball (Cambridge) and *Sartor Resartus* (Everyman); J. S. Mill, *Utilitarianism* (Everyman); Strachey, *Eminent Victorians* (Penguin). Some consideration will be given in seminar reports and discussion to the work of Darwin, Huxley, Spencer, Pater, the Rossettis, Swinburne.

Tuesday and Thursday at 11

Professor ROSS

ENGLISH 22. *Modern British Literature.*

A seminar course which should be taken in the final year of Honours work. The course will deal principally with: Conrad, Forster, Lawrence, Joyce, Woolf, Huxley, Shaw, Synge, O'Casey, Yeats, Eliot, Auden. A list of prescribed texts may be obtained from the Registrar's Office.

Monday and Wednesday at 11

Mr LOUGHEED and Mr ROBERTSON

Reading Courses

ENGLISH R1. *American and Canadian Literature.*

Professor VINCENT

ENGLISH R2. *The Renaissance* (to be chosen by students who take ENGLISH 21)

Professor ROSS

ENGLISH R3. *The Victorian Age* (to be chosen by students who take ENGLISH 19). *Not offered in 1957-8.*

Professor ROSS

ENGLISH R4. *The English Novel.*

Professor WHALLEY

ENGLISH R5. *Literary Criticism.*

Mr ROBERTSON

GRADUATE COURSES

For information about graduate courses in English, see the *Calendar of Graduate Studies*.

French Language and Literature

W. H. EVANS, B.A., Docteur de l'Université de Paris, O.A., *Professor*
GLEN SHORTLIFFE, M.A., Ph.D., *Professor*

P. B. GOBIN, L. ès L., Agrégé de l'Université, *Assistant Professor*

JEAN OGIER, L. ès L., *Lecturer* (on leave of absence 1957-8)

M. BOISVERT, L. ès L., *Lecturer*

Students who have at least second class honours in the Ontario Grade XIII examination in French Authors and Composition (or the equivalent) will normally take FRENCH 2 (*Intermediate French*). All other students entering the Department of French will take FRENCH 1 (*Elementary French*).

Candidates offering French as one of the subjects of concentration on the General Course normally take FRENCH 2, 10 and 14 and advanced courses with permission from the Department or FRENCH 1, 3 and 14, in that order.

THE HONOURS COURSE IN FRENCH

Candidates planning to take the Honours Course in French are advised to offer Grade XIII subjects as follows: English, Latin, French, a science and a fifth subject which may be a third language, a second science or History.

The programme for the degree is as follows:

(a) The Major

- FRENCH 2—*Intermediate French; Language, French Civilization*
- 10—*Language; Study of Texts*
- 14—*Survey of French Literature*
- 20—*Le théâtre classique*
- 21—*The Age of Enlightenment*
- 23—*Contemporary Literature*
- 25—*Sixteenth Century Literature*

With one course selected from LATIN 2 (*Translation and Prose Composition*), ANCIENT HISTORY 4 (*A Survey of Greek and Roman Society*), CLASSICAL LITERATURE 1 (*The Literature of Greece and Rome*), ENGLISH 15 (*Shakespeare and the Drama of the Renaissance*), ITALIAN A (*Introductory Italian*), a course in German, HISTORY 6 (*The Evolution of Europe*).

- FRENCH R1—*Le Roman Contemporain*
- R2—*Le Roman du 19e Siècle*
- R3—*La Pensée française; or*
- R4—*La Littérature canadienne-française*

The Honours programme in French is planned as a progressive whole and it is important that the courses be taken in the following order: FRENCH 2; FRENCH 10, 14 in the first year of Honours; and FRENCH 20, 21, 22, 23, as given, in the second and final year of Honours.

French

(b) The Minor

LATIN 2, 12 or 13, 20, 30; or

ENGLISH 2, 10, any two chosen from 15, 19, 20, 21, 22; or

GERMAN 2, 10, 12 and 14; or

SPANISH 2, 10, 22 or 24, 29 or 30; or

HISTORY 3 or 5 or 6, 12, 13 or 19, and one other course numbered over 10.

(c) General courses to complete the work for degree. With Latin, German, Spanish or History as minor: ENGLISH 2, PHILOSOPHY 1, a science. If the candidate has Grade XIII standing in a science he may use the third general course as a free option. With English as minor: PHILOSOPHY 1, a science, a free option. If the candidate has Grade XIII standing in a science he may use the second general course as a free option.

(d) Two general examinations in French.

In preparation for the first general examination Honours students in the penultimate and final year will have one tutorial class in translation a week.

All students must provide themselves with a dictionary. For general classes Harrap's *Shorter French and English Dictionary* should be procured. For Honours classes *Le petit Larousse Illustré* is indispensable.

For information about the course of study leading to High School certificates in Latin and French, English and French, French and German, French and Spanish, see page 97.

A minor in French normally consists of FRENCH 2, 10, 14 and one further course.

Students offering French for the General Honours Course take the minor prescribed in the preceding paragraph with one reading course.

Oral Work. All students taking FRENCH 2 or any course numbered over 2 will attend conversation classes for one hour a week. Hours will be arranged at the beginning of term. An oral examination is required of all such students and will take place in March.

For information about scholarships in French see page 56.

COURSES OF INSTRUCTION

FRENCH 1. *Elementary French.*

Sonet and Shortliffe, *Review of Standard French* (Harcourt, Brace); Pagnol, *Topaze* (Heath); Simenon, *Tournants Dangereux* (Appleton-Century-Crofts).

Lectures—Tuesday and Thursday at 10 or Monday and Wednesday at 10 or 11

Laboratory—Friday 1.30 to 3.30 (one hour only)

Professor SHORTLIFFE, Mr BOISVERT and tutors

FRENCH 2. *Intermediate French.*

Fraser, Squair and Parker, *French Composition and Reference Grammar* (Heath); Cattanès and Robert, *Promenades historiques et littéraires* (Harcourt, Brace); Chinard, *Scènes de la vie française* (revised edition, 1950) (Ginn).

Monday, Wednesday, Friday at 10 or 11 or

Tuesday, Thursday, Saturday at 10

Professor EVANS, Professor GOBIN and Mr BOISVERT

FRENCH 3. *Practical French.*

Craven and Rey, *Entretiens à Paris* (Ginn); Berbiers and Cullerne, *Causeries et Exercices Français* (C.U.P.); Romans, *Knock* (Appleton-Century).

Lectures—Tuesday and Thursday at 10

Laboratory—Thursday, 1.30-3.30 (one hour only)

Mr BOISVERT

FRENCH 10. *Language, Study of Texts.*

Prerequisite—FRENCH 2 with Grade B standing.

Fraser, Squair and Parker, *French Composition and Reference Grammar* (Heath); Nicholson, *Parallel Passages for French Translation and Composition* (Harrap); Bishop, *College Survey of French Literature* (Harcourt, Brace) Vol. II.

Monday, Wednesday, Friday at 11

Professor GOBIN

FRENCH 14. *Survey of French Literature.*

Bishop, *College Survey of French Literature* (Harcourt, Brace) Vols. I and II; Verriest, *L'Evolution de la littérature française* (Harper).

Monday, Wednesday, Friday at 10

Professor SHORTLIFFE

FRENCH 20. *Le théâtre classique.*

Seronde and Peyre, *Nine Classic French Plays* (Heath); Bishop, *College Survey*, Vol. I (Harcourt, Brace); Verriest, *L'Evolution de la littérature française* (Harper).

Monday, Wednesday, Friday at 11

Professor EVANS

FRENCH 21. *The Age of Enlightenment.*

Fellows and Torrey, *The Age of Enlightenment* (Crofts); Voltaire, *Candide* (Clarke, Irwin); Beaumarchais, *Le Barbier de Séville* (Classiques Larousse).

Tuesday, Thursday at 11-12.30.

Professor SHORTLIFFE

FRENCH 23. *La littérature moderne.*

Castex and Surer, *XXe Siècle* (Hachette); Bishop, *College Survey of French Literature*, Vol. II (Harcourt, Brace); Pucciani, *The French Theatre since 1930* (Ginn); Hackett, *Anthology of French Poetry* (Macmillan).

Not offered in 1957-8

Professor GOBIN

FRENCH 25. *Sixteenth Century Literature.*

Weinberg, *French Poetry of the Renaissance* (Harper); Rabelais, *Oeuvres choisies*, 2 vols. (C.I. Larousse); Montaigne, *Oeuvres* (extraits) 2 vols. (C.I. Larousse).

Hours to be arranged.

Professor EVANS

Reading Courses

FRENCH R1. *Le Roman Contemporain.*

Colette, *La Vagabonde*; Rolland, *Jean-Christophe*, (i) *L'Aube*, (ii) *Le Matin*; Martin du Gard, *Jean Barois*; Romains, *Verdun*; Proust, *Du Côté de Chez Swann*; Mauriac, *Le Noeud de Vipères*; Malraux, *La Condition Humaine*; St. Exupéry, *Vol de Nuit*; Camus, *La Peste*; Sartre, *La Nausée*. Professor GOBIN

FRENCH R2. *Le Roman du 19e Siècle.*

Chateaubriand, *Atala*; V. Hugo, *Notre Dame de Paris*; Stendhal, *Le Rouge et le Noir*; Balzac, *Eugénie Grandet*; Flaubert, *Madame Bovary*; V. Hugo, *Les Misérables*; Goncourt, *Renée Maupérin*; Zola, *La Fortune des Rougon*; Maupassant, *Bel-Ami*; P. Bourget, *Le Disciple*. Professor SHORTLIFFE

FRENCH R3. *La pensée française.*

Sas, *Les grands savants français*; Montaigne, *Essais*; Descartes, *Discours de la Méthode*; Pascal, *Pensées*; Voltaire, *Traité sur la Tolérance*; A. Comte, *Cours de philosophie positiviste, leçons 1 et 2*; Taine, *Introduction à l'histoire de la littérature anglaise*; Bergson, *Le Rire*; Sartre, *Qu'est-ce que la littérature?*

Professor SHORTLIFFE

FRENCH R4. *La littérature canadienne-française.*

Gaspé, *Les Anciens Canadiens*; Savard, *Ménard, maître drapeur*; Desrosiers, *Les engagés du grand portage*; Ringuelet, *Le poids du jour*; R. Charbonneau, *Fontile*; G. Martin, *Tentations*; Germaine Guèvremont, *Le Survenant*; Lemelin, *Les Plouffe*; Gabrielle Roy, *Alexandre Chenevert*; Giroux, *Au delà des visages*; Saint-Denis-Garneau, *Journal*; Laure Riese, *L'âme de la poésie canadienne* (Macmillan).

Mr BOISVERT

GRADUATE COURSES

For information about graduate courses in French, see the *Calendar of Graduate Studies*.

Geological Sciences

J. E. HAWLEY, M.A., Ph.D., F.R.S.C., F.G.S.A., F.M.S.A., *Miller Memorial Research Professor and Chairman of Graduate Geological Studies*

J. W. AMBROSE, B.A., Ph.D., F.R.S.C., F.G.S.A., *Professor*

A. W. JOLLIFFE, M.A., Ph.D., F.R.S.C., F.G.S.A., *Professor*

L. G. BERRY, M.A., Ph.D., F.R.S.C., F.G.S.A., F.M.S.A.,
Professor and Chairman of Undergraduate Geological Studies

J. L. USHER, B.A., M.Sc., Ph.D., *Associate Professor*

M. M. FITZPATRICK, M.A., *Assistant Professor*

W. A. GORMAN, M.Sc., Ph.D., *Lecturer*

A. M. EVANS, B.Sc. (Liverpool),

R. Samuel McLaughlin Research Fellow

J. G. MACDONALD, *Spectrographer*

Students taking GEOLOGY 2 (*Elementary Mineralogy*) must have Grade XIII standing in Chemistry or have passed in CHEMISTRY 1. GEOLOGY 1 (*Elementary Geology and Physiography*) and GEOLOGY 2 (*Elementary Mineralogy*) are prerequisite to courses numbered 10 and over. GEOLOGY 3a (*Elementary Drawing*) is prerequisite to GEOLOGY 11. GEOLOGY 11 (*Structural Geology*) and GEOLOGY 12 (*Optical Mineralogy and Petrography*) are prerequisite to courses numbered 16 and over.

Students selecting Geological Science as one of the subjects of concentration on the General Course are required to take GEOLOGY 1 (*Elementary Geology and Physiography*) and 2 (*Elementary Mineralogy*). The third course may be chosen from GEOLOGY 10a (*Elements of Optical Mineralogy*) with 13a (*Physical Mineralogy and Crystallography*), or GEOLOGY 11 (*Structural Geology*), or GEOLOGY 12 (*Optical Mineralogy and Petrography*).

THE HONOURS COURSE IN GEOLOGICAL SCIENCES

Candidates planning to take the Honours Course in Geological Sciences should offer Grade XIII subjects as follows: English, Mathematics (3 papers), Physics, Chemistry, and a language. It is advisable for those candidates who plan to take the Honours Course in paleontology and stratigraphy to offer Grade XIII Biology.

Several combinations of courses are possible leading to specialization in the various fields of geology, each having an appropriate selection of supporting courses from Biology, Chemistry, Mathematics, and Physics. The four sequences shown below illustrate how these may be planned so as to avoid conflicts and satisfy prerequisites. The first (I) is a general course; (II) offers some specialization in the fields of mineralogy and petrology; (III) in paleontology and stratigraphy; and (IV) in geophysics.

A total of 18 courses is required for the degree. In some circumstances students may be allowed to take one or two extra courses. These are noted in the following columns as available courses.

Geological Sciences

	I	II	III	IV
1 y s e t a r		Geology 1 Math. 2 English 2 Chemistry 2	<i>one of:</i> Biology 1 Biology 3 Physics 2	
2 n d y e a r	Geol. 2 Geol. 3a Geol. 17b Chem. 11 Philos. 7 <i>one of:</i> Biol. 1 Astronomy 1	Geol. 2 Geol. 3a Geol. 17b Chem. 11 Philos. 7 <i>one of:</i> Chemistry 16 Astronomy 1	Geol. 2 Geol. 3a Math. 3a ¹ Philos. 7 <i>two of:</i> Chem. 11 Biol. 2 Biol. 3 Biol. 17	Geol. 2 Geol. 3a Math. 13 Philos. 7 Physics 11 <i>one of:</i> Geol. 19a Math. 3a ¹
3 r d y e a r	Geol. 11 Geol. 12 Geol. 14 Geol. 18b Geol. 25a <i>Available</i> Chem. 14 Geog. 12b Geol. 19a	Geol. 11 Geol. 12 Geol. 13a Geol. 14 Chem. 14	Geol. 11 Geol. 12 Geol. 18b Geol. 25a <i>at least one full course from</i> Biol. 2 Biol. 17 Geol. 19a Geog. 12b	Geol. 11 Geol. 12 Geol. 23 Physics 10a Physics 12b <i>Available</i> Geol. 14 Geol. 18b Geol. 25a
4 t h y e a r	Geol. 16a ² Geol. 20 Geol. 21 Geol. 24 <i>one of:</i> Geol. 23 Geol. 26 Geol. 27 Geol. R1	Geol. 16a ² Geol. 21 Geol. 24 Geol. 27 <i>Available:</i> Chem. 16 Geol. R4 Geol. R5 Geol. R6	Geol. 16a ² Geol. 20 Geol. 22 Geol. 23 Geol. 29a <i>one of:</i> Geol. 21 Geol. 24 Geol. 27 Geol. R1 Geol. R3	Geol. 16a ² Geol. 26 Geol. 28a <i>at least two of:</i> Geol. 20 Geol. 21 Geol. 24 Geol. 27

Where Geology is the minor and Chemistry the major in an Honours Course, the appropriate courses are: GEOLOGY 1, 2, 3a, 10a, 11, 13a.

Candidates for admission to an Honours Course in Geological Sciences must obtain at least 62 per cent in each of GEOLOGY 1 and 2.

¹ MATHEMATICS 3a is prerequisite to GEOLOGY 18b.

² GEOLOGY 16a includes ten days' field work taken following spring examinations at the end of the third year.

COURSES OF INSTRUCTION

GEOLOGY 1. *Elementary Geology and Physiography.*

Lectures: External and internal geological processes and the resultant topography; an outline of the history of the earth; fossils and their significance; a preparatory course along with GEOLOGY 2 (*Elementary Mineralogy*) for the Honours Course in Geological Sciences; a background course for physical geography; illustrated with maps, models, pictures and slides.

Laboratory: Identification of common rocks, minerals and fossils; interpretation of geological and topographical maps; structural and stratigraphic problems; field trips during the fall term.

Text-book: Longwell and Flint, *Introduction to Physical Geology*, 1955 (Wiley).

Lectures—Tuesday and Thursday at 11

Laboratory—Two sections: Tuesday or Wednesday, 1.30-4.30

Professor USHER and Dr GORMAN

GEOLOGY 2. *Elementary Mineralogy.*

A course in elementary crystallography, blowpipe analysis and descriptive and determinative mineralogy of about 100 common or more important minerals.

Prerequisite—Honours Matriculation Chemistry, or CHEMISTRY 1 taken concurrently. Text-book: Kraus, Hunt and Ramsdell, *Mineralogy* (McGraw-Hill), 2nd edn., 1951 or Dana, *Textbook of Mineralogy* (Wiley), Ed. 4, 1936.

Two sections with Science Geology II.

Lectures—Monday and Wednesday at 11 or Tuesday at 9 and Thursday at 10

Laboratory—Monday, 1.30-3.30

Professor BERRY and Dr GORMAN

GEOLOGY 3a. *Elementary Drawing.*

The work will consist of practice in lettering, free-hand orthographic and pictorial drawings, theory of orthographic and pictorial drawings, training in reading of drawings, making geometrical drawings, orthographic drawings, auxiliary views, sections, pictorial drawing.

The close relation between Engineering Drawing and Descriptive Geometry is stressed and problems in Descriptive Geometry are covered, including true length and slope of lines, slope of planes and true size of planes.

Text-books: Svensen and Street, *Drafting Problem Layouts*, Series C and Lettering Exercises; Johnson and Wladaver, *Descriptive Geometry Problems*; Giesecke, Mitchell, and Spencer, *Technical Drawing*.

Friday, 1.30-3.30; Saturday, 9.00-12.00 a.m. in the first term.

Credit for this course is dependent on successful completion of Geology 11.

GEOLOGY 10A. *Elements of Optical Mineralogy.*

Optical properties of crystals including non-opaque minerals and chemical compounds.

Prerequisites—MATHEMATICS 1 and PHYSICS 1. Text-book: Wahlstrom, *Optical Crystallography*, 1951, 2nd edn. (Wiley).

Lectures—Wednesday and Friday at 10, first term (with Geology 12)

Laboratory—Thursday, 1.30-3.30 or 3.30-5.30 (first term) Professor BERRY

Geological Sciences

GEOLOGY 11. *Structural Geology.*

Form, development, examination and interpretation of common geologic structures. Topographic expression of such structures. Structural control of ore and petroleum deposits, field trips.

Prerequisites—GEOLOGY 1, 2 and 3a.

Text-book: Billings, *Structural Geology*, 2nd ed.

Reference: Lahee, *Field Geology*, 5th ed.

Lectures—Monday and Wednesday at 9

Laboratory—Friday, 1.30-3.30

Professor AMBROSE

GEOLOGY 12. *Optical Mineralogy and Petrography.*

Optical properties of non-opaque minerals; introduction to the use of the polarizing microscope; introduction to the study of rocks.

Prerequisites—GEOLOGY 1 and 2, MATHEMATICS 1 and PHYSICS 1. Text-books: Wahlstrom, *Optical Crystallography*, 2nd edn., 1951; Wahlstrom, *Igneous Minerals and Rocks*; Pirsson and Knopf, *Rocks and Rock Minerals*.

Lectures—Wednesday and Friday at 10

Laboratory—Thursday, 1.30-3.30 or 3.30-5.30, first term;

Wednesday, 1.30-3.30 and Thursday, 1.30-3.30, second term

Professor BERRY

GEOLOGY 13A. *Physical Mineralogy and Crystallography.*

An advanced course in the character of crystals, crystal measurement with an introduction to X-ray diffraction.

Prerequisites—GEOLOGY 2, PHYSICS 1, MATHEMATICS 1. Text-books: Dana, *Text-book of Mineralogy*, 1932 (Wiley), or Phillips, *An Introduction to Crystallography*, 2nd edition, 1956 (Longmans). Books of reference: Evans, *Crystal Chemistry* (Cambridge Univ. Press), 1948; Bunn, *Chemical Crystallography* (Oxford), 1946.

Lectures—Monday at 10, Friday at 9, first term

Laboratory—Wednesday 1.30-3.30, first term

Professor BERRY

GEOLOGY 14. *Economic Mineralogy.*

The properties, occurrences, valuation, and uses of ore and industrial minerals, and their determination by various methods. Elementary geochemistry of the metallic elements.

Prerequisite—GEOLOGY 1 and 2. Text-books: Dana's *Text-book of Mineralogy*, Ford, 4th ed. (John Wiley and Sons); Bateman, *Economic Mineral Deposits*, (McGraw-Hill), 1950.

Lectures—Tuesday and Friday at 11

Laboratory—Wednesday, 3.30-5.30

Professor JOLLIFFE

GEOLOGY 16A. *Field Geology.*

The field work of this course should be taken at the end of the penultimate year. Field work consists of a systematic geological survey of a selected area in southeastern Ontario. Unless otherwise announced, headquarters for the survey camp will be Queen's Biological Station on Lake Opinicon. Students live at the camp and complete their field work during the ten days following spring examinations (dates to be announced). Each student plots the survey data and prepares a contoured geological map to scale, together with a geological report on the area studied during the fall term following. Some time is also devoted to the practice of elementary photogrammetry.

Prerequisites—GEOLOGY 1, 2, 11, 12. Reference Book: Lahee, *Field Geology. Lectures and Laboratory*—Monday, 1-30-4.30, first term

Professor FITZPATRICK

GEOLOGY 17B. *Introduction to Geophysics.*

An elementary course outlining all geophysical methods applied in the mining and petroleum industries.

Prerequisites—GEOLOGY 1 and MATHEMATICS 2

Text-books: Dobrin, *Introduction to Geophysical Prospecting* (McGraw-Hill, 1952).

Lectures—Thursday at 9.00; Friday at 10.00, second term

Laboratory—Monday 3.30-5.30, second term

GEOLOGY 18B. *Sedimentation.*

A short course in the principles of sedimentation and in sedimentary petrography.

Prerequisites—GEOLOGY 1, 2, 11, 12, and MATHEMATICS 3A. GEOLOGY 12 and 18B may be taken concurrently. Text-books: Pettijohn, *Sedimentary Rocks* (Harper), or Krumbein and Sloss, *Stratigraphy and Sedimentation* (Freeman). Reference texts: W. H. Twenhofel, *Principles of Sedimentation* (McGraw-Hill, 1939); H. B. Milner, *Sedimentary Petrography* (Thos. Murby, 1929); Krumbein and Pettijohn, *Manual of Sedimentary Petrography* (Appleton-Century, 1938).

Lectures—Monday and Wednesday at 11, second term

Laboratory—Monday, 1.30-3.30, second term

Professor USHER

GEOLOGY 19A. *Reports and Essays.*

Weekly reports or essays on topics relating to the subject of Engineering Geology are required. Discussion groups are held in which the subject matter of the reports is discussed.

Prerequisite—GEOLOGY 1.

Laboratory—Monday, 3.30-5.30

Professor FITZPATRICK

GEOLOGY 20. *Stratigraphy and Historical Geology.*

The rôle of tectonics in, and the basic principles of, stratigraphy; the facies concept; the values and limitations of fossils in stratigraphic correlation; continental and organic evolution with special reference to North America.

Prerequisites—GEOLOGY 25A and 18B. Text-books: Krumbein and Sloss, *Stratigraphy and Sedimentation* (Freeman); Dunbar, *Historical Geology* (John Wiley and Sons), or Moore, *Historical Geology* (McGraw-Hill). Reference

Geological Sciences

texts: Neaverson, *Stratigraphical Paleontology* (Oxford); Gignoux, *Stratigraphic Geology* (Freeman).

Lectures—Tuesday and Thursday at 9

Laboratory—Monday, 3.30-5.30

Professor USHER

GEOLOGY 21. *Economic Geology of Metallic Minerals.*

Prerequisite—GEOLOGY 1, 2, 14.

The principles of ore deposition and description of ore deposits, Canadian and others. The laboratory work consists of examination of ores in both hand specimens and polished sections and problems.

Text-books: Bateman, *Economic Mineral Deposits* (McGraw-Hill, 1950); or Lindgren, *Mineral Deposits* (McGraw-Hill, 1933). References: Bruce, *Mineral Deposits of the Canadian Shield* (Macmillan); *Structural Geology of Canadian Ore Deposits* (Can. Inst. Mining & Met., 1949); Publications of the Geological Survey, Ont. Dept. of Mines and Quebec Dept. of Mines.

Lectures—Three hours per week, first term, two hours, second term

Monday and Tuesday at 11 (Economic Geology)

Wednesday at 10, first term (Mineralography)

Laboratory—Thursday, 2.30-4.30

Professor HAWLEY

GEOLOGY 22. *Invertebrate Paleontology.*

A full course in invertebrate paleontology for those students taking the stratigraphy option. Morphology, taxonomy, stratigraphic and temporal ranges, ecologic interpretations, and geologic values and limitations of invertebrates are examined.

Text—*Principles of Invertebrate Paleontology*, McGraw-Hill, 1953; Shrock & Twenhofel.

References—To be announced.

Lectures—Monday and Wednesday at 9

Laboratory—Thursday 1.30-3.30

GEOLOGY 23. *Petroleum Geophysics.*

A course in the principles of petroleum geophysics emphasizing seismic prospecting. Some time is devoted to well-logging techniques.

Prerequisites—GEOLOGY 1 and MATHEMATICS 2. Reference texts: C. Hewitt Dix, *Seismic Prospecting for Oil* (Harper, 1952); M. R. J. Wyllie, *The Fundamentals of Electric Log Interpretation* (Academic Press, 1954); M. B. Dobrin, *Introduction to Geophysical Prospecting* (McGraw-Hill, 1952).

Lectures—Wednesday, 11 and 2.30

Laboratory—Wednesday, 3.30-5.30

Professor FITZPATRICK

GEOLOGY 24. *Petrology.*

Genesis of igneous and metamorphic rocks. Physico-chemical conditions effective in the generation and differentiation of magmas. Laboratory study of rock suites and determination of mineral composition by petrographic methods.

Prerequisites—GEOLOGY 1, 2, 12.

References: Wahlstrom, *Theoretical Petrology*; Mason, *Principles of Geochemistry*; Winchell, *Elements of Optical Mineralogy*, Pt. II.

Lectures—Tuesday and Thursday at 10

Laboratory—Tuesday, 2.30-5.30

Professor AMBROSE

GEOLOGY 25A. *Systematic Paleontology.*

An introduction to invertebrate fossils, their morphology, taxonomy and identification; a summary outline of fossil vertebrates and plants.

Text-book: Shimer, *An Introduction to the Study of Fossils* (Macmillan).

Reference: Twenhofel and Shrock, *Invertebrate Paleontology* (McGraw-Hill).

Lectures—Monday and Wednesday at 11, first term

Laboratory—Monday, 1.30-3.30, first term

Professor USHER

GEOLOGY 26. *Mining Geophysics.*

The application of geophysical methods to the search for ore deposits. Magnetic gravimetric, radiometric, and electrical methods are emphasized. The design of instruments is discussed and formulae are developed which are useful in the interpretation of geophysical data.

Prerequisites—GEOLOGY 1 and MATHEMATICS 2

Reference texts: Jakosky, *Exploration Geophysics* (Trija, 1950); Nettleton, *Geophysical Prospecting for Oil* (McGraw-Hill, 1940); Dobrin, *Introduction to Geophysical Prospecting* (McGraw-Hill, 1952).

Lectures—Monday at 10 both terms; Thursday at 11, first term; Wednesday at 10, second term

Laboratory—Wednesday 1.30-3.30.

Professor FITZPATRICK

GEOLOGY 27. *Research and Thesis.*

Directed research on either mineralogical or geological problems designed to train the student in research methods. A thesis embodying the results of the investigation is required. Material for such studies may be gathered by students during summer field work or may be supplied by the department, or may be obtained by supervised geological mapping of a selected area near Kingston. The thesis must be submitted in an acceptable form by March 31.

Six hours per week.

GEOLOGY 28A. *Theoretical Geophysics.*

The application of physical methods to the study of the earth.

Prerequisites—GEOLOGY 23 and MATHEMATICS 13. Reference texts: Jeffreys, *The Earth* (Cambridge, 1952, 3rd Ed.), Kuiper (Ed.), *The Earth as a Planet* (University of Chicago Press, 1953). Hours to be arranged.

Professor FITZPATRICK

GEOLOGY 29a. *The Habitat of Oil.*

The occurrence of oil and gas in space and time, with particular emphasis on North American and Canadian fields.

Lectures—Monday and Wednesday at 10.

Laboratory—Wednesday 1.30-3.30

Text—to be announced.

Reading Courses

GEOLOGY R1. *History of the Progress of Geology.*

Geikie, *The Founders of Geology; Geology—1888-1938*, Geol. Soc. Amer. 50th Anniversary volume; *A Century of the History of the Geological Survey of Canada*, Alcock; *Principles of Geology*, Lyell, Ch. I-III incl., Book IV., additional selected papers.

Conferences will be arranged.

Professor AMBROSE

GEOLOGY R2. *Magma and Their Behaviour.*

This course may be taken with or following GEOLOGY 24.

Turner and Verhoogen, *Igneous and Metamorphic Petrology* (McGraw-Hill) Ch. 1 to 14 inclusive; *Origin of Granites*, Geol. Soc. Amer. Mem. '28; Balk, *Structural Behaviour of Igneous Rocks*, Geol. Soc. Amer. Mem. 5; Shand, *Irruptive Rocks*; Loewinson-Lessing, *A Historical Survey of Petrology*.

Conferences will be arranged.

Professor AMBROSE

GEOLOGY R3. *Evolution in Earth History.*

Moody, *Introduction to Evolution*; Darwin, *The Origin of Species*; Simpson, *The Meaning of Evolution*, and *Tempo and Mode in Evolution*; W. J. Arkell, *The Jurassic System in Great Britain*, pp. 1-37; Romer, *Man and the Vertebrates: Selected Articles*.

Conferences will be arranged.

Professor USHER

GEOLOGY R4. *World Distribution of Minerals and its Significance.*

W. Van Royen and O. Bowles, *The Mineral Resources of the World* (Prentice-Hall, 1952); T. S. Lovering, *Minerals in World Affairs* (Prentice-Hall, 1943); E. W. Zimmerman, *World Resources and Industries* (Harper and Bros., 1951); W. S. Paley et al., *Resources for Freedom* (U.S. Gov. Printing Office, 1952); additional selected papers.

Conferences will be arranged.

Professor JOLLIFFE

GEOLOGY R5. *X-Rays and Crystal Structure.*

K. Lonsdale, *Crystals and X-rays*, 1948 (Bell and Sons, London); C. W. Bunn, *Chemical Crystallography*, 1946 (Oxford, Clarendon Press); W. L. Bragg, *Atomic Structure of Minerals* (Cornell Univ. Press, 1937); additional selected papers.

Conferences will be arranged.

Professor BERRY

GEOLOGY R6. *Metamorphic Geology.*

This reading course is designed to broaden the students' knowledge of metamorphic processes affecting minerals and rocks, and may be taken with or following GEOLOGY 24.

C. K. Leith and W. J. Mead, *Metamorphic Geology* (New York, 1915) (available in Miller Library only) Parts I and II, Chapters I, II, VIII; A. Harker, *Metamorphism* (Methuen and Co., 1932); Turner and Verhoogen, *Igneous and Metamorphic Petrology* (McGraw-Hill, 1951); Hans Ramberg, *The Origin of Metamorphic and Metasomatic Rocks* (Univ. Chicago Press, 1952).

Weekly conferences will be arranged.

Professor HAWLEY

GRADUATE COURSES

For information about graduate courses in Geological Sciences, see the *Calendar of Graduate Studies*.

German Language and Literature

HILDA C. LAIRD, B.A., B.L.S., Ph.D., *Professor*
 HANS EICHNER, B.A., Ph.D., *Associate Professor*
 ALISON P. SCOTT, M.A., B.Litt., Ph.D.,
 R. Samuel McLaughlin *Teaching Assistant*

GERMAN A (*Introductory German*) is a beginners' course. It may be counted towards a General degree or as an optional course towards an Honours degree in another subject, but not towards a major or minor in German. Students who enter the University without matriculation in German may, however, complete an Honours Course in this subject in the usual time by taking German A in their first winter session and German 1 in the following summer. GERMAN 1 (*Elementary German*) is the first course for students with Grade XII standing or with Grade XIII standing with less than second class honours. GERMAN 2 (*Intermediate German*) is the first course for students with at least second class honours in the Grade XIII examinations.

Students offering German as one of the subjects of concentration on the General Course take from three to five courses, choosing whichever of the following groups may be appropriate:

German A, 1, 2, 10 (*Cultural History, Literature, Prose Composition*), 12 (*Nineteenth Century Literature; Advanced Composition*) or 14 (*Modern Literature; Advanced Composition*), or

German 1, 2, 10, 12, 14, or

German 2, 10, 12, 14, 16 (*Lessing; Goethe's Faust*) or 18 (*Goethe and Schiller*).

Courses A to 10 must be taken in the order listed. Courses 12 and 14, and 16 and 18 are offered only in alternate years.

THE HONOURS COURSE IN GERMAN

Candidates planning to take the Honours Course in German are advised to offer Grade XIII subjects as follows: English, Latin, German, French, and a science.

The programme for the degree is as follows:

(a) The Major

GERMAN 2—*Intermediate German*

10—*Cultural History, Literature, Prose Composition*

12—*Nineteenth Century Literature; Advanced Prose Composition*

14—*Modern Literature; Advanced Prose Composition*

16—*Lessing; Goethe's Faust*

18—*Goethe and Schiller*

20—*Introduction to Middle High German*

With one course selected from HISTORY 6 (*The Evolution of Europe*), LATIN 2 (*Translation and Prose Composition*). CLASSICAL LITERATURE 1 (*The Literature of Greece and Rome*), PHILOSOPHY 7 (*History of Philosophy*).

GERMAN R1—*Die deutsche Novelle*

R2—*Deutsche Essays und deutsche Briefe*

R3—*Der deutsche Bildungsroman*

(b) The Minor

FRENCH 2, 10, 14, and one further course; or

SPANISH 2, 10, 22 or 24, 29 or 30; or

ENGLISH 2, 10, any two chosen from 15, 19, 20, 21, 22; or

LATIN 2, 12 or 13, 20, and 30; or

HISTORY 6, 12, 24 and 27; or

PHILOSOPHY 1, 10, 27 and two advanced courses (See page 169).

A candidate who wishes to take some other subject as minor requires the consent of the Department of German.

(c) General Courses to complete the work for a degree: ENGLISH 2, PHILOSOPHY 1, a science. If the candidate has Grade XIII standing in a science he may use the third general course as a free option.

(d) Two general examinations in German.

NOTE:—In special cases and with the consent of the department a slight variation in the major from that listed above may be made.

Students making German their major subject in Honours and students taking the Courses leading to the High School Teaching Certificate in English and German, or French and German should arrange their courses in German as follows: GERMAN 2; GERMAN 10 and either 12 or 14 in the first year of Honours; GERMAN 12 or 14 and 16 or 18 in the second year of Honours; GERMAN 16 or 18 and 20 (major Honours only) in the final year. Reading courses may be taken in the second or in the final year of Honours, or in the summer.

For information about the course of study leading to the High School Teaching Certificates in English and German, and French and German, see page 97.

A minor in German normally consists of GERMAN 2, 10, 12 and 14.

Students offering German for the General Honours Course take the minor as prescribed in the preceding paragraph with GERMAN R1.

All students taking GERMAN 2 and Honours courses in German have one period (1 hour) of instruction in conversation each week. Oral examinations are held in March. A satisfactory mark on the oral examination is a requirement in each course.

Students whose programme of work in any year does not include a course with prose composition will be required to do a weekly translation exercise.

For information about scholarships in German and the German Exchange Scholarship see page 58.

Students should provide themselves with a dictionary, at first Cassell's *German and English Dictionary*, then an all German one, such as *Der Sprach-Brockhaus*.

COURSES OF INSTRUCTION

GERMAN A. *Introductory German*.

This course is intended to meet the needs of students who enter the University with little or no knowledge of German. The work comprises a study of the elements of grammar, oral and written composition, and the reading of easy literature.

Text-books: Schinnerer, *Beginning German* (Macmillan); Meyer, *Auf dem Dorfe* and *In der Stadt* (Houghton Mifflin); Schweitzer, *Leben und Denken* (Heinemann).

Tuesday, Thursday, Saturday at 10, Monday at 3.30

Professor LAIRD

GERMAN 1. *Elementary German*.

The work includes the reading of texts, the study of grammar and syntax (including written and oral exercises), memorizing of poems, writing from dictation and translation at sight.

Prerequisite—GERMAN A, or Grade XII standing. Text-books: Schinnerer, *Continuing German* (Macmillan); Loran and Phelps, *Aus unserer Zeit* (Norton); Heath-Chicago German Series, Nos. 4, 5, 6, 7, 8, 9 and *Word Book for Graded German Readers 1-10* (Heath); Fleissner and Fleissner, *Kleine Anthologie deutscher Lyrik* (Crofts).

Tuesday, Thursday, Saturday at 10

DR. SCOTT

GERMAN 2. *Intermediate German*.

The work consists of a more intensive study of modern literature, both prose and verse, oral and written composition, and a more advanced study of grammar and syntax.

German

Prerequisite—GERMAN 1, or Grade XIII standing, with at least second class honours. Text-books: Cochran, *A Practical German Review Grammar* (Prentice-Hall); Sutcliffe, *German Translation and Composition* (Harrap); Kurtz, *Drei Novellen* (Prentice-Hall); Schiller, *Wilhelm Tell* (Holt).

Tuesday, Thursday, and Saturday at 9; Wednesday at 2.30

Professor LAIRD

GERMAN 10. *Cultural History, Literature, Prose Composition.*

In addition to prose composition, this course includes a survey of German cultural history, and the study of ballad poetry and two dramas.

Prerequisite—GERMAN 2. By special permission GERMAN 2 and 10 may be taken in the same year. Text-books: Bithell, *Advanced German Composition* (Methuen); Hebbel, *Agnes Bernauer* (Oxford); Schiller, *Jungfrau von Orleans* (Heath); *Deutsche Balladen* (Bertelsmann); Shuster and Bergstraesser, *Germany, A Short History* (Norton); Waterhouse, *A Short History of German Literature* (Methuen).

Hours to be arranged.

Professors LAIRD and EICHNER

GERMAN 12. *Nineteenth Century Literature. Advanced Composition.*

Prerequisite—GERMAN 2. GERMAN 10 must be taken either before this course or in the same year with it. Text-books: Campbell, *German Plays of the Nineteenth Century* (Crofts); Hauptmann, *Die Weber* (Cambridge); Bruns, *Die Lese der deutschen Lyrik* (Crofts); Dutton, *Advanced Modern German Prose* (Harrap).

Not offered in 1957-58.

GERMAN 14. *Modern Literature, 1890-1945. Advanced Composition.*

Prerequisite—GERMAN 2. GERMAN 10 must be taken either before this course or in the same year with it. Text-books: Bithell, *An Anthology of German Poetry 1880-1940* (Methuen); Hauptmann, *Die versunkene Glocke* (Blackwell); *Hanneles Himmelfahrt* (Insel); Hofmannsthal, *Der Tor und der Tod* (Insel); Thomas Mann, *Tonio Kröger* (Blackwell); *Der Tod in Venedig* (Fischer Bücherei); Kafka, *Der Prozess* (Schocken); Nietzsche, *Vom Nutzen und Nachteil der Historie für das Leben* (Reclam, 7134); Bithell, *Advanced German Composition* (Methuen). Other readings will be assigned.

Professor EICHNER

GERMAN 16. *Lessing; Goethe's Faust.*

Prerequisites—GERMAN 10, and either 12 or 14. Text-books: Lessing, *Hamburgische Dramaturgie I und II* (Cambridge); *Fabeln und Erzählungen* (Parnass); *Emilia Galotti* (Reclam); *Minna von Barnhelm, Nathan der Weise* (Cambridge); Goethe, *Faust I und II*, ed. Calvin Thomas (Heath); *Urfaust* (Reclam, 5273).

Not offered in 1957-58.

GERMAN 18. *Goethe and Schiller.*

Prerequisites—GERMAN 10, and either 12 or 14. Text-books: Goethe, *Selected Poems*, ed. by Barker Fairley (Heinemann); *Götz von Berlichingen* (Holt); *Werther* (Blackwell); *Egmont* (Heath); *Iphigenie auf Tauris* (Heath); *Torquato*

Tasso (Reclam, 88); *Hermann und Dorothea* (Heath); Schiller, *Die Räuber* (Blackwell); *Kabale und Liebe* (Blackwell); *Don Carlos* (Oxford); *Wallenstein* (Blackwell); *Maria Stuart* (Cambridge).

Hours to be arranged.

Professor LAIRD

GERMAN 20. *Introduction to Middle High German.*

This course is intended only for those students who propose to take a full major in German.

Prerequisite—GERMAN 10. Text-book: Bachmann, *Mittelhochdeutsches Lesebuch* (Beer).

Hours to be arranged.

Professor LAIRD

GERMAN 22. *Seminar and Reading Course.*

Offered under special circumstances for German-speaking students.

Not offered in 1957-58.

Reading Courses

A reading course may be taken either during the winter session or during the summer. Students are asked to discuss these courses with the instructors responsible as soon as possible after registering. The list of prescribed texts for R2 may be obtained from the instructor.

GERMAN R1. *Die deutsche Novelle.*

Bennet, *A History of the German "Novelle"*; Goethe, *Novelle*; Kleist, *Michael Kohlhaas*; Tieck, *Der Runenberg*; E. T. A. Hoffmann, *Das Fräulein von Scuderi*; Chamisso, *Peter Schlemihl*; Brentano, *Vom braven Kasperl und vom schönen Annerl*; Immerman, *Der Oberhof*; Droste-Hülshoff, *Die Judenbuche*; Jeremias Gotthelf, *Die schwarze Spinne* (Blackwell); Grillparzer, *Der arme Spielmann*; Stifter, *Bergkristall*; O. Ludwig, *Zwischen Himmel und Erde*; Heyse, *L'Arrabiata*; Keller, *Romeo und Julia auf dem Dorfe*; C. F. Meyer, *Der Heilige*; Thomas Mann, *Mario und der Zauberer*.

Nachschlagebücher: Klein, *Geschichte der deutschen Novelle*; Merker und Stammler, *Reallexikon der deutschen Literaturgeschichte*; Benno von Wiese, *Die deutsche Novelle von Goethe bis Kafka*.

Professor LAIRD

GERMAN R2. *Deutsche Essays und deutsche Briefe.*

Professor LAIRD

GERMAN R3. *Der deutsche Bildungsroman.*

Goethe, *Wilhelm Meisters Lehrjahre*; Gottfried Keller, *Der grüne Heinrich*, zweite Fassung; Thomas Mann, *Der Zauberberg*.

Kritische Literatur: Roy Pascal, *The German Novel*, S. 1-98; H. H. Borchardt, *Der Roman der Goethezeit*, S. 223-239, 265-303; K. Viëtor, *Goethe*, S. 129-150; W. H. Bruford, "Wilhelm Meister as a Picture . . . of Society", *PEGS*, 1933, S. 20-45; H. Maync, *Gottfried Keller*; E. Ermatinger, *Gottfried Kellers Leben*, Band I, S. 281-339 und 566-588; H. C. Hatfield, *Thomas Mann*; H. Eichner, "Aspects of Parody in the Works of Thomas Mann", *Modern Language Review*, XLVII (1952), S. 30-48.

Professor EICHNER

Hebrew—History

GRADUATE COURSES

For information about graduate courses in German, *see the Calendar of Graduate Studies*.

Hebrew Language and Literature

Rev E. G. CLARKE, M.A., B.D., *Lecturer*

Students proceeding to Theology may, with the permission of the Board of Studies, substitute HEBREW 1 for a course in Latin.

COURSES OF INSTRUCTION

HEBREW 1.

The aim of this class is to enable students to read any of the narrative parts of the Hebrew Scripture. The Christmas term is devoted entirely to thorough study and practice of grammar and exercises. After the Christmas vacation parts of Genesis will be read, in addition to the work in grammar and composition.

Text-books: Davidson, *Hebrew Grammar* (20th or later editions), pages 1-106; Kittel, *Biblia Hebraica*, or *Hebrew Bible*, issued by B. and F. Bible Society; *Lexicons*, Brown-Driver-Briggs, or Bagster.

Hours to be arranged.

Mr. CLARKE

HEBREW 2.

This class aims at more advanced work in the Hebrew language than that attempted in HEBREW 1. Selections from the historical books will be studied and lectures given on Hebrew syntax and the principles of the textual criticism of the Old Testament. Students will be practised regularly in translating English into Hebrew, both *viva voce* and in written exercises.

Text-books: Davidson, *Hebrew Grammar*, pp. 106-236; *Hebrew Syntax*; *Hebrew Bible* and *Lexicons* as in course 1.

Hours to be arranged.

Mr. CLARKE

History

W. E. C. HARRISON, O.B.E., M.A., *Professor*

A. R. M. LOWER, M.A., Ph.D., LL.D., F.R.S.C., *James Douglas Professor of Canadian and Colonial History*

W. E. L. SMITH, M.C., M.A., Ph.D., D.D., *Associate Professor of Mediaeval History*

F. W. GIBSON, M.A., *Associate Professor**

S. F. WISE, M.A., B.L.S., *Assistant Professor*

H. S. CROWE, M.C., M.A., *Visiting Associate Professor* (1957-58)

Mrs. H. A. ELLIOTT, B.A., *Sessional Tutor*

Mrs. DUNCAN ROBERTSON, M.A., *Sessional Tutor*

Sir James Aikins Fellow (1957-8): To be appointed

J. J. MACKINNON, B.A., *Western Ontario Graduates Fellow* (1957-8)

* *McLaughlin Research Chair* (1957-58).

Students reading History as one of the subjects of concentration for the General Course take HISTORY 3 (*The North Atlantic Community*), HISTORY 5 (*The Evolution of England*) and HISTORY 6 (*The Evolution of Europe*). If they wish to elect a fourth course in History, they are recommended to take HISTORY 4 (*Ancient History*). Students whose work in the general courses in History is satisfactory may take also one or more of HISTORY 12 (*Mediaeval Europe*), HISTORY 13 (*The British Empire and Commonwealth*), HISTORY 14 (*American History from the Revolution to the Second World War*), HISTORY 24 (*The Renaissance and the Reformation*). In exceptional cases students on the General Course who have a sufficiently high standing in History may, with the permission of the Department, be admitted in their final year to other advanced courses, including HISTORY 27 (*Europe: The Politics of Survival*).

THE HONOURS COURSE IN HISTORY

Candidates planning to take the Honours Course in History are advised to offer Grade XIII subjects as follows: English, Latin (preferred to Mathematics though such qualification is acceptable), History, French and an option, preferably a second modern language.

Candidates offering History as a subject of Grade XIII with a grade not lower than B and intending to apply for admission to Honours with History as major or minor, in their first year, take HISTORY 12 concurrently with HISTORY 3 or 5 or 6. For such students a normal first year programme is ENGLISH 2 (*A General Introduction to English Literature*), PHILOSOPHY 1 (*Introduction to Philosophy*), HISTORY 3 or 5 or 6, and HISTORY 12, and a course in the minor. Students who expect to choose the Canadian and Commonwealth option, as set forth below, are advised to take HISTORY 3; those likely to select the British and European group are advised to take HISTORY 5 or 6.

Honours in History may be taken either in British and European History or in Canadian and Commonwealth History.

The programme for the degree is as follows:

(a) The Major

I *Canada and the Commonwealth*

HISTORY 3—*The North Atlantic Community*; or

5—*The Evolution of England*; or

6—*The Evolution of Europe*;

12—*Mediaeval Europe*;

13—*The British Empire and Commonwealth*;

History

14—*American History from the Revolution to the Second World War*;

18A—*The Tudor Despotism* and

18B—*The Stuart Revolutions*;

19—*Society and Politics in Modern England*;

20—*French Canada*; or

28—*Studies in the Social and Political History of Canada* with

ANCIENT HISTORY 4—*A Survey of Greek and Roman Society*

HISTORY R6—*The Study and Interpretation of History* and two other reading courses selected from HISTORY R1 (*The Middle Ages*), HISTORY R3 (*British Foreign Policy*), HISTORY R4 (*Anglo-American and Canadian-American Relations*), and HISTORY R5 (*Historical Geography: The Relation of History and Geography*).

OR

II *Britain and Europe*

HISTORY 3—*The North Atlantic Community*; or

5—*The Evolution of England*; or

6—*The Evolution of Europe*;

12—*Mediaeval Europe*;

13—*The British Empire and Commonwealth*;

18A—*The Tudor Despotism* and

18B—*The Stuart Revolutions*;

19—*Society and Politics in Modern England*;

27—*Europe: The Politics of Survival*;

and either HISTORY 14—*American History from the Revolution to the Second World War*; or

16—*Mediaeval Britain*; or

24—*The Renaissance and the Reformation*

with ANCIENT HISTORY 4 and reading courses as set forth above.

(b) *The Minor*

ENGLISH 2, 10, any two chosen from 15, 19, 20, 21, 22; or

FRENCH 2, 10, 14, and one further course, or

GERMAN 2, 10, 12, 14; or

PHILOSOPHY 1, 10, 27 and two advanced courses (see page 169); or

ECONOMICS 1 or 10; ECONOMICS 4, 12, and two other courses in Economics; or

POLITICAL SCIENCE: POLITICS 2, 30, 31, and two courses in Politics selected from POLITICS 32, 35, 36, 37, 39.

A candidate who wishes to take some other subject as minor, may do so with the consent of the Department of History.

(c) General courses to complete the work for a degree:

PHILOSOPHY 1, ENGLISH 2, a science. If the candidate has Grade XIII standing in a science he may use the third general course as a free option. Students who may wish to proceed to graduate studies are advised to take a second modern language, preferably German.

(d) Two general examinations in History.

High School Teaching Certificate in History

Candidates for admission to the course of study leading to the Interim High School Assistant's Certificate, Type A, in History at the Ontario College of Education take the regular Honours Course in History with a minor in Political and Economic Science made up of ECONOMICS 4 (*Introduction to Economics*), POLITICS 2 (*Introduction to Politics*), ECONOMICS 1 (*Elementary Economic Theory*) or ECONOMICS 10 (*Principles of Economics*), and two further courses in Politics and Economics. GEOLOGY 1 (*Elementary Geology and Physiography*) or GEOGRAPHY 1 (*Introduction to Geography*) is also prescribed and HISTORY R5 (*The Relation of History and Geography*) and R6 (*The Study and Interpretation of History*) are included among the reading courses.

Minors in History

(a) A minor in History normally consists of either HISTORY 3 or 5 or 6; 12 and 13 or 19; and one other course numbered over 10.

(b) Candidates for admission to the course of study leading to the Interim High School Assistant's Certificate, Type A, in English at the Ontario College of Education take the regular Honours Course in English with a minor in Social History made up as follows: HISTORY 3 or 5 or 6; 12, and two courses to be selected from HISTORY 14, 16, 18A, 18B, 19, 20, 24. See p. 98, Course for the Teaching Certificate in English.

General Honours

Students selecting History as one of their subjects for General Honours will take the courses prescribed for a minor in History (see (a) above), with the addition of HISTORY R6.

For information about scholarships in History, see page 59.

GRADUATE STUDIES

Information on facilities for graduate work in History is published in the *Calendar of Graduate Studies*.

COURSES IN HISTORY

HISTORY 3. *The North Atlantic Community.*

The evolution of Canada and the United States in the North Atlantic Community.

Basic texts: A. R. M. Lower, *Colony to Nation: A History of Canada* (Longmans); J. D. Hicks, *The Federal Union* (Houghton Mifflin); Lord Charnwood, *Abraham Lincoln* (The Pocket Books). Other reading to be assigned. Extramural students are expected to acquire additional books, a list of which will be sent on request.

Monday, Wednesday, Friday at 10

Professors LOWER and CROWE

HISTORY 4. *Ancient History: A Survey of Greek and Roman Society.*

This course is given by the Department of Classics. The prescription appears on page 126.

HISTORY 5. *The Evolution of England: A Study of Free Institutions.*

Basic texts: G. M. Trevelyan, *History of England*, Third edition (Longmans); W. E. Lunt, *History of England*, Third edition (Harper); Goldwin Smith, *Constitutional and Legal History of England* (Scribner's). Other reading to be assigned.

Monday, Wednesday, Friday at 9

Professor WISE

HISTORY 6. *The Evolution of Europe.*

An historical introduction to contemporary Europe.

Basic texts: H. A. L. Fisher, *A History of Europe* (Arnold) or E. M. Burns, *Western Civilizations*, 4th ed. (Norton); Kenneth M. Setton and Henry R. Winkler (Eds.), *Great Problems in European Civilization* (Prentice-Hall); E. W. Fox and H. S. Deighton, (Eds.), *Atlas of European History* (Oxford). Other reading to be assigned. Extramural students are expected to acquire additional books.

Tuesday, Thursday and Saturday at 11

Professors WISE and CROWE

HISTORY 12. *Mediaeval Europe.*

A study of the evolution of Western civilization during this period.

Basic texts: Carl Stephenson, *Mediaeval History* (Harper); J. B. Ross and M. M. McLaughlin, *The Mediaeval Reader* (Macmillan). Other reading to be assigned.

Tuesday, Wednesday, Thursday at 8

Professor SMITH

HISTORY 13. *The British Empire and Commonwealth.*

This course will normally be taken in the first year of Honours work.

Basic text and other readings to be assigned.

Monday, Wednesday, Friday at 10

Professor CROWE

HISTORY 14. *American History from the Revolution to the Second World War.*

Basic texts: Herbert Agar, *The Price of Union* (Houghton Mifflin); R. W. Leopold and A. S. Link, *Problems in American History* (Prentice-Hall); Eric F. Goldman, *Rendezvous with Destiny* (Vintage Press). Other reading to be assigned.

Tuesday, Thursday, Saturday at 10

Professor CROWE

HISTORY 16. *Mediaeval Britain.*

A seminar in the constitutional and cultural aspects of the subject to 1485, open to students in the second or third year after admission to Honours, who have taken History 12.

Basic texts: J. E. A. Jolliffe, *The Constitutional History of Mediaeval England* (Macmillan); E. W. S. Barrow, *Feudal Britain* (Arnold); C. Stephenson and F. G. Marcham, *Documents of English Constitutional History*, Revised edition (Harper). Other reading to be assigned.

Tuesday and Thursday at 10, Friday at 8

Professor SMITH

Not given in 1957-8.

HISTORY 18A. *The Tudor Despotism.*

This course will normally be taken in the first year of Honours work.

Basic texts: S. T. Bindoff, *Tudor England* (Penguin Books); C. Stephenson and F. G. Marcham, *Documents of English Constitutional History* (Harper); J. B. Black, *The Reign of Elizabeth* (Oxford University Press); D. L. Keir, *A Constitutional History of Modern Britain*, Revised edition (Macmillan). Other reading to be assigned.

Tuesday and Thursday, 2.30-4.00

Professor WISE

HISTORY 18B. *The Stuart Revolutions.*

This course will normally be taken in the first year of Honours work.

Basic texts: G. M. Trevelyan, *England under the Stuarts* (Methuen); C. Stephenson and F. G. Marcham, *Documents of English Constitutional History* (Harper); D. L. Keir, *A Constitutional History of Modern Britain*, Revised edition (Macmillan). Other reading to be assigned.

Tuesday and Thursday, 2.30-4.00

Professor WISE

HISTORY 19. *Society and Politics in Modern England.*

This course will normally be taken by students in their second or third year after admission to Honours. Reading to be assigned.

Seminar—Monday, 2.30-4.30; tutorials, to be arranged.

Professor HARRISON

HISTORY 20. *French Canada.*

This course will attempt an explanation of French Canada in the history of Canada. A reading knowledge of French is desirable. The course should normally be taken in the final year.

Reading to be assigned.

Seminar—Hours to be arranged.

Professors LOWER and GIBSON

Not given in 1957-8.

History

HISTORY 24. *The Renaissance and the Reformation.*

The emphasis in lectures and discussions will be on the cultural and religious aspects of the subject.

Basic texts: Henry S. Lucas, *The Renaissance and the Reformation* (Harper). V. H. H. Green, *Renaissance and Reformation* (Macmillan). Other reading to be assigned. Professor SMITH

HISTORY 27. *Europe: The Politics of Survival.*

An historical approach to the problems of contemporary Europe. The course should normally be taken in the final year.

Basic texts: A. J. Grant and H. W. V. Temperley, *Europe in the Nineteenth and Twentieth Centuries, 1789-1950*, 6th ed., revised and edited by Lillian M. Penson (Longmans); E. H. Carr, *The Twenty Years' Crisis, 1919-1939: An Introduction to the Study of International Relations* (Macmillan); Hans J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace* (Knopf). Other readings to be assigned.

Seminar—Monday and Wednesday 11-12.30

Professor HARRISON

HISTORY 28. *Studies in the Social and Political History of Canada.*

Reading to be assigned. This course should normally be taken in the final year.

Seminar—Tuesday, 2.30 and Friday at 2.00.

Professor LOWER

Reading Courses

HISTORY R1. *The Middle Ages.*

G. G. Coulton, *The Mediaeval Scene*; Eileen Power, *Mediaeval People*; J. Huizinga, *The Waning of the Middle Ages*; Henri Pirenne, *Mediaeval Cities*; C. H. Haskins, *The Rise of the Universities*; C. G. Crump and E. F. Jacob (Eds.), *The Legacy of the Middle Ages*; F. J. C. Hearnshaw, *The Social and Political Ideas of some Great Mediaeval Thinkers*; Henri Pirenne, *A History of Europe from the Invasions to the Sixteenth Century*.

HISTORY R3. *British Foreign Policy.*

R. W. Seton-Watson, *Britain in Europe, 1789-1914: A Survey of Foreign Policy*; Sir John Tilley and Stephen Gaselee, *The Foreign Office*; Harold Nicholson, *Diplomacy*; A. F. Pribram, *England and the International Policy of the European Great Powers, 1871-1914*; G. M. Trevelyan, *Grey of Falloden*; Viscount Grey, *Twenty-five years*; Harold Nicholson, *Sir Arthur Nicholson: First Lord Carnock*; Viscount Haldane, *Autobiography*; Winston Churchill, *The World Crisis 1911-1914*, Vol. I; James Joll (Ed.), *Britain and Europe: Pitt to Churchill, 1793-1940*. P. A. Reynolds, *British Foreign Policy in the Inter-War Years*.

HISTORY R4. *Anglo-American and Canadian-American Relations.*

J. B. Brebner, *North Atlantic Triangle*; A. L. Burt, *The United States, Great Britain and British North America: From the Revolution to the Establishment of Peace after the War of 1812*; L. B. Shippee, *Canadian-American Relations 1849-1874*; L. M. Gelber, *The Rise of Anglo-American Friendship: A Study in World Politics, 1898-1906*; H. L. Keenleyside, *Canada and the United States* (rev. ed. 1952); P. E. Corbett, *The Settlement of Canadian-American Disputes*; W. B. Munro, *American Influence on Canadian Government*; R. MacG. Dawson, *Canada in World Affairs 1939-1941*; F. H. Soward, *Canada in World Affairs 1944-46*.

HISTORY R5. *The Relation of Geography and History.*

This course consists of a study of the relation of history and geography especially with respect to the topics indicated below. The books listed are to be read for their general point of view, their illustrative value or the thesis they set forth, rather than for the detailed factual information they contain. But in all cases where general points are made, students should master ample supporting detail.

Topics: 1. Discovery and Exploration. 2. International Relations and Geography. 3. Geography in Canadian History: geography, exploration and the fur trade; geography and the struggle for North America; geographical factors in the relations between Canada and the United States.

1. Lloyd A. Brown, *The Story of Maps*; The Norse Sagas (The principal sagas are to be found in any of the following: A. M. Reeves, *The Finding of Vineland the Good*, pp. 19-84; Olson and Bourne, *The Northmen, Columbus and Cabot*, pp. 14-67; G. M. Gathorne-Hardy, *The Norse Discoverers of America*, pp. 1-73; E. F. Gray, *Lief Erikson, Discoverer of America*, pp. 24-71); S. E. Morison, *Admiral of the Ocean Sea: A Life of Christopher Columbus*; Champlain's *Voyages, 1604-1616*; Francis Parkman, *LaSalle and the Discovery of the Great West*; Holland Rose, *Man and the Sea* (a general, over-all view).

2. Andreas Dorpalen, *The World of General Haushofer: Geopolitics in Action*, Chapters II and III; Julian S. Corbett, *England in the Seven Years' War: A Study in Combined Strategy*; Admiral A. T. Mahan, *The Influence of Sea-Power upon History, 1660-1783*, opening chapters; Mahan, *The Panama Canal and Sea-Power in the Pacific*, a short essay in *Armaments and Arbitration*; Halford A. MacKinder, *Democratic Ideals and Reality*; G. S. Graham, *Empire of the North Atlantic*; R. G. Albion, *Forests and Sea Power*, Introduction and Chapters III-VII.

3. Griffith Taylor, *Canada, A Study of Cool Continental Environments and their Effect on British and French Settlement*; A. R. M. Lower, *Colony to Nation*, Chapters II, VIII, XI, XII, XV, XVI; Lower, *Geographical Determinants in Canadian History*, in *Essays in Canadian History* ed. R. Flenley, or Lower, *Canada, Nation and Neighbour*, Chapter III; H. A. Innis, *The Fur Trade in Canada*.

HISTORY R6. *The Study and Interpretation of History.*

Allan Nevins, *The Gateway to History*; A. L. Rowse, *The Use of History*; R. G. Collingwood, *The Idea of History*; H. Butterfield, *Christianity and History*; Henri Sée, *The Economic Interpretation of History*; G. M. Trevelyan, *An Autobiography and Other Essays*; Arnold J. Toynbee, *A Study of History* (Abridgment of Volumes I-VI by D. C. Somerville and Volume X); Emery Neff, *The Poetry of History: The Contribution of Literature and Literary Scholarship to the Writing of History since Voltaire*; Pieter Geyl, *Napoleon: For and Against; Debates with Historians*; C. H. Williams, *The Modern Historian*; J. R. M. Butler, *The Present Need for History*; Joseph R. Strayer (Ed.), *The Interpretation of History*; E. L. Woodward, *British Historians*.

Industrial Relations

GRADUATE COURSES

HISTORY 30. *History and Historians.*

A seminar on the study and writing of History.

Wednesday at 3.30

Professors LOWER and HARRISON

HISTORY 31. *Advanced Studies in Canadian History.*

A seminar combining discussion of historical methods and bibliography, and problems of interpretation in Canadian history, with reports by students on selected topics.

Readings on the period will be assigned, and other material in the University's collection of documents will be used in preparing the reports.

Hours to be arranged.

Professor LOWER

HISTORY 32. *Mediaeval Studies.*

A seminar in special studies related to graduate theses.

At times to be arranged.

Professor SMITH

HISTORY 33. *Studies in Modern English Society and Politics.*

A seminar related to graduate theses.

At times to be arranged.

Professor HARRISON

HISTORY 34. *International History.*

A seminar related to graduate theses.

At times to be arranged.

Professor HARRISON

HISTORY 35. *Ecclesiastical History.*

A seminar related to graduate theses.

At times to be arranged.

Professor SMITH

Industrial Relations

J. C. CAMERON, M. Com., *Professor*

C. H. CURTIS, M.A., *Associate Professor*

F. J. L. YOUNG, M.A., *Lecturer*

The Department of Industrial Relations was established in 1944 to continue the work begun in 1937 by the Industrial Relations Section (a section of the School of Commerce and Administration).

The department collects data respecting policies, programmes and experience in employer-employee relations, keeps the material up-to-date and classifies it so that it is readily available to students, employers, labour organizations and governments; and collects current information in the industrial and social security fields. It keeps in touch with industrial and labour union organizations so that it may study actual developments.

The Department gives instruction to students in the Department of Political and Economic Science, the School of Commerce, the Faculty of Applied Science, and the School of Nursing; prepares reports on subjects of immediate and vital interest; and holds conferences and short courses for business executives, personnel managers, industrial relations managers and labour leaders. Thus the department combines the work of a library, a clearing house of information, and a research bureau. It also participates in the University programme of instruction (intramural and extramural) and provides a centre for the discussion of recent developments.

Commerce students who wish to specialize in Industrial Relations will take the following courses offered by the Department of Political and Economic Science and the School of Commerce:

ECONOMICS 23—*Industrial Relations*.

COMMERCE 50—*Industrial Organization and Management*.

COMMERCE 59—*Thesis in the field of Industrial Relations*.

The department is prepared to give special courses to students who wish to do advanced work in industrial relations.

For information about scholarships in Industrial Relations see page 64. For information about professional courses write to the Head of the Department.

Mathematics

R. L. JEFFERY, M.A., Ph.D., D.Sc., F.R.S.C.,

The N. F. Dupuis Professor of Mathematics

N. MILLER, M.A., Ph.D., *Professor*

A. VIBERT DOUGLAS, M.B.E., M.Sc., Ph.D., F.R.A.S.,

Acting Professor of Astronomy

F. M. WOOD, M.A., B.Sc., *Professor*

I. HALPERIN, M.A., Ph.D., F.R.S.C., *Professor*

G. L. EDGETT, M.A., Ph.D., *Professor*

H. W. ELLIS, M.Sc., M.A., Ph.D., *Associate Professor*

J. W. WILKINSON, M.A., *Assistant Professor*

MATHEMATICS 1, 2, 3A and 7B, and ASTRONOMY 1 are general courses, and are open to all who have passed the prerequisites.

Students offering Mathematics as one of the subjects of concentration on the General Course ordinarily take MATHEMATICS 2 (*Differential and Integral Calculus*), MATHEMATICS 3A (*Applied Statistics*), MATH-

MATHEMATICS 7B (*Mathematics of Investment*) and ASTRONOMY 1 (*An Introduction to Astronomy and Astrophysics*). PHYSICS 2 may be taken in place of ASTRONOMY 1. If they maintain satisfactory standing in MATHEMATICS 2, they may, with the consent of the department, take Honours courses in Mathematics in place of MATHEMATICS 3A, 7B and ASTRONOMY 1. Students who have obtained credit in MATHEMATICS 2 and 10, and are not proceeding with the Honours Course, may count these towards a group for the General degree in Arts.

Students are advised not to attempt an Honours course in Mathematics unless they have obtained high standing in the preceding pass course. Grade B in such a course is the minimum standing on which a student may proceed.

Students who have at least Grade B in MATHEMATICS 1, or second class in Mathematics of Honour Matriculation, and who intend to enter the Honours Course in Mathematics should take MATHEMATICS 2, MATHEMATICS 10 (*Algebra and Analytic Geometry*) in the same year. They must obtain a standing of at least Grade B in these courses if they wish to proceed.

For information about the course of study leading to the Interim High School Assistant's Certificate, Type A, in Mathematics and in Mathematics and Physics at the Ontario College of Education, see page 98.

Candidates for entrance to the University, who expect to take at the university any course in Mathematics beyond MATHEMATICS 1, should include in their Grade XIII programme Algebra, Geometry, and Trigonometry.

THE HONOURS COURSE IN MATHEMATICS

Candidates planning to take the Honours Course in Mathematics are advised to offer Grade XIII subjects as follows: English, Mathematics (3 papers), Physics, a language, a fifth subject which may be a second science, a second language or History.

The programme for the degree is as follows:

(a) The Major

MATHEMATICS 2—*Differential and Integral Calculus*

10—*Algebra and Analytic Geometry*

12—*Vectors, Matrices, Determinants, Surfaces of the Second Degree*

13—*Calculus and Differential Equations*

19—*Advanced Calculus*

20—*Probability and Statistics*

21—*Foundations of Mathematics*

23—*The Calculus of Finite Differences, and Life Contingencies*

24—*Advanced Algebra*

MATHEMATICS R1

R2

R3

(b) The Minor

ECONOMICS 1 or 10; ECONOMICS 4, 12, and two other courses in Economics; or

PHYSICS 2, 11, 10A, 12B, 13B, 14A.

A candidate who wishes to take some other subject as minor, may do so with the consent of the Department of Mathematics.

(c) General courses to complete the work for a degree: ENGLISH 2, PHILOSOPHY 1, a language.

(d) At the end of the fourth year there are four final examinations, each of which is based on a regular course, assigned readings, and related work in earlier courses. These examinations are numbered I, II, III, IV, and the courses with which they are associated are respectively R3, 21, 23, 24.

The work for a major in Mathematics is normally covered in four years provided that MATHEMATICS 1 or the Mathematics of Honour Matriculation has been taken previously. The normal distribution of the work over four years is as follows:

First Year MATHEMATICS 2, 10

Second Year MATHEMATICS 12, 13, and R1

Third Year MATHEMATICS 19, 20, and R2

Fourth Year MATHEMATICS 21, 23, 24, and R3 as part of the preparation for General Examinations I, II, III, and IV

It is advisable for the student to aim at completing the minor subject at least one year before the time of graduation. It is also advisable to do at least one reading course during a summer, preferably R3.

Minors in Mathematics

When Mathematics is the minor associated with Physics as major, the minor consists of MATHEMATICS 2, 10, 13, 19.

When Mathematics is the minor associated with Economics, Philosophy, or Psychology as major, the minor consists of MATHEMATICS 2, 10, 13, and either 19 or 20.

Mathematics

General Honours Course

When Mathematics is one of the three special subjects on the General Honours Course (page 95), the prescription of work is as follows: MATHEMATICS 2, 10, 12, 13, R1.

For information about scholarships in Mathematics, see page 60.

COURSES OF INSTRUCTION

MATHEMATICS 1. *Trigonometry, Analytic Geometry and Algebra.*

McGraw-Hill, *Five-place Logarithms and Trigonometric Tables*. Other texts to be prescribed.

Tuesday, Thursday, Saturday at 10

MATHEMATICS 2. *Differential and Integral Calculus.*

Prerequisite—MATHEMATICS 1. Text-book: R. L. Jeffery, *Elementary Calculus*. Toronto University Press.

Monday, Wednesday, Friday at 9, or

Professor JEFFERY

Tuesday, Thursday, Saturday at 10

Professor EDGETT

MATHEMATICS 3A. *Applied Statistics.*

A general introduction to statistics.

Prerequisite—MATHEMATICS 1 or equivalent. Text-book: Mode, *Elements of Statistics*, 2nd edn. (Prentice-Hall).

Monday, Wednesday, Friday at 8

Professor EDGETT

MATHEMATICS 3B. *Applied Statistics.*

This course is a continuation of MATHEMATICS 3A. It includes an elementary study of: Multiple and Partial Correlation, Tetrachoric r , Biserial r , Chi-Square, Analysis of Variance, Quality Control.

Textbook: Edwards, *Statistical Methods for the Behavioral Sciences* (Rinehart).

Monday, Wednesday, Friday at 8

MATHEMATICS 7B. *Mathematics of Investment.*

Prerequisite—MATHEMATICS 1. Text-book: Hart, *Mathematics of Investment*, with tables (Heath).

Monday, Wednesday, Friday at 8

ASTRONOMY 1. *An Introduction to Astronomy and Astrophysics.*

Baker, *Astronomy*, 6th edn., (van Nostrand); Kingston, *Star Guide*.

Monday, Wednesday, Friday at 9

Professor DOUGLAS

MATHEMATICS 10. *Algebra and Analytic Geometry.*

Prerequisite—MATHEMATICS 2 which may be taken concurrently. Text-books: Rosenbach and Whitman, *College Algebra* (Ginn); Sisam and Atchison, *Analytic Geometry* (Holt); supplemented by mimeographed notes.

Monday, Wednesday, Friday at 10

Professor MILLER

MATHEMATICS 12. *Vectors, Matrices and Determinants; Analytic Geometry of Three Dimensions; Surfaces of the Second Degree.*

Prerequisite—MATHEMATICS 10.

Monday, Wednesday, Friday at 11

Professor HALPERIN

MATHEMATICS 13. *Calculus and Differential Equations.*

Calculus text as in Mathematics 2. Norman Miller, *A First Course in Differential Equations* (Oxford University Press).

Tuesday, Thursday, Saturday at 11

Professor ELLIS

MATHEMATICS 19. *Advanced Calculus.*

Taylor, *Advanced Calculus*, (Ginn).

Prerequisites—MATHEMATICS 10 and 13.

Tuesday, Thursday, Saturday at 8

Professor MILLER

MATHEMATICS 20. *Probability and Statistics.*

Uspensky, *Introduction to Mathematical Probability* (McGraw-Hill); Hoel, *Introduction to Mathematical Statistics*, 2nd Edn. (Wiley); Adams, *Basic Statistical Concepts*.

Prerequisite—MATHEMATICS 13.

Tuesday, Thursday, Saturday at 9

Professor EDGETT

MATHEMATICS 21. *Foundations of Mathematics.*

Some fundamental questions of mathematics; its axiomatic character; the number system and its extensions; some famous problems which have stimulated the growth of mathematics; elements of topology.

Two hours per week.

Professor MILLER

MATHEMATICS 22. *Theory of Functions of a Complex Variable; the Laplace Transform.*

Not offered in 1957-8.

MATHEMATICS 23. *The Calculus of Finite Differences, and Life Contingencies.*

Text-books: Freeman, Part II, *Actuarial Mathematics* (The Actuarial Society); Richardson, *An Introduction to the Calculus of Finite Differences* (Van Nostrand); Larson and Gaumnitz, *Life Insurance Mathematics* (Wiley).

Two hours per week.

Professor EDGETT

MATHEMATICS 24. *Advanced Algebra.*

Theory of groups, rings, and fields.

Two hours per week

Professor HALPERIN

READING COURSES

MATHEMATICS R1.

C. V. Durell, *Projective Geometry* (Macmillan).

MATHEMATICS R2.

Selections from Hardy and Wright, *Introduction to the Theory of Numbers* (Oxford).

MATHEMATICS R3.

Konrad Knopp, *Elements of the General Theory of Analytic Functions* translated by Frederick Bagemihl (Dover Publications); Wylie, *Advanced Engineering Mathematics*, Chapters 6 and 12-14 inclusive (McGraw-Hill).

Music

GRADUATE COURSES

For information about graduate courses in Mathematics, see the *Calendar of Graduate Studies*.

Music

GRAHAM GEORGE, Mus. D., *Associate Professor*

MUSIC 1, 2 and 3 may be offered towards the General B.A. degree either as a group or as individual free options; towards the Honours degree as free options. MUSIC 1 is normally prerequisite to MUSIC 2 and MUSIC 3, but students who have passed a recognized course outlining musical history may be admitted to MUSIC 2 or 3.

On recommendation of the departments concerned, students may apply to the Faculty of Arts for permission to combine courses in Fine Arts (Music, Drama, Art) to make up a group towards the General B.A. degree.

COURSES OF INSTRUCTION

MUSIC 1. *Music since 1600.*

A study of the structure of music in the Baroque, Classical and Romantic periods. The course includes an introductory discussion of plainsong and polyphony, and an outline of twentieth century idioms. Technical knowledge of music is not a prerequisite.

A two-hour period a week is provided for analytical listening, Thursday 2.30-4.30

Hours to be arranged.

MUSIC 2. *The Baroque and Classical Periods.*

An aural study of (i) instrumental music in the middle and late Baroque periods, from Lully to Bach; (ii) the music of Haydn, Mozart, and Beethoven, with special attention to the principles of tonal structure which underlie their work.

A two-hour listening period a week is provided for analytical listening, time to be arranged.

Hours to be arranged.

MUSIC 3. *The Nineteenth and Twentieth Centuries.*

An aural study of (i) one of the later music-dramas of Wagner, by means of which the general characteristics of the period are discussed; (ii) the post-Wagnerian emergence of the twelve-tone (chromatic) scale as the basis of a new group of idioms. Special attention is paid to the work of Hindemith, Stravinsky, Bartok, and Schoenberg.

A two-hour listening period a week is provided for analytical listening, time to be arranged.

Hours to be arranged.

Philosophy

- A. R. C. DUNCAN, M.A., *The John and Ella G. Charlton Professor of Philosophy*
 H. M. ESTALL, M.A., Ph.D., *Associate Professor*
 W. B. CARTER, M.A., Ph.D., *Lecturer*
 R. L. WATTS, B.A., *Lecturer*
 A. P. FELL, A.M., B.Phil., *Teaching Fellow*

PHILOSOPHY 1 (*Introduction to Philosophy*) is normally a prerequisite to all later courses in Philosophy and is ordinarily taken in the first year. If, however, it cannot be worked into the first year programme, students may take instead either PHILOSOPHY 3 (*Knowledge, Belief and Action*) or PHILOSOPHY 7 (*History of Philosophy*).

Students selecting Philosophy as one of the main subjects on the General Course will normally take PHILOSOPHY 1, PHILOSOPHY 3, and PHILOSOPHY 7.

For information about scholarships in Philosophy, see page 61.

THE HONOURS COURSE IN PHILOSOPHY

Candidates planning to take the Honours Course in Philosophy are advised to offer Grade XIII subjects as follows: English, Mathematics (3 papers), a language, a science, and a fifth subject which may be a second language, a second science or History.

The programme for the degree is as follows:

(a) The Major

- PHILOSOPHY 1—*Introduction to Philosophy*
 PSYCHOLOGY 2—*An Elementary Survey of Mental Life*
 PHILOSOPHY 10—*Problems of Philosophy*
 12—*History of Ancient Philosophy*
 14—*History of Modern Philosophy*
 27—*Moral Philosophy*
 29—*Logic*

- Two of PHILOSOPHY 15—*Recent Philosophy*
 23—*Political Philosophy*
 25—*Existentialism*
 31—*Seminar Course*
 33—*Kant and Post-Kantian Idealism*

Philosophy

Three of the six reading courses.

PHILOSOPHY 31 differs in content from year to year and may be taken twice.

(b) The Minor

HISTORY 3, 12, 13 or 19, and one other course numbered over 10; or
POLITICS 2, 30, 31, and two of 32, 36, 37, 39; or

PSYCHOLOGY 2, MATHEMATICS 3, PSYCHOLOGY 11, and two other
courses in PSYCHOLOGY; or

MATHEMATICS 2, 10, 13, and one of 19, 20.

A candidate who wishes to take some other subject as minor, may do so with the consent of the Department of Philosophy.

(c) General courses to complete the work for degree. With History, Mathematics or Psychology as minor: ENGLISH 2, a free option. With Politics as minor: ENGLISH 2.

(d) Two general examinations in Philosophy.

The Course in Honours Philosophy requires four years and is normally arranged as follows:

First Year PHILOSOPHY 1, PSYCHOLOGY 2.

Second Year PHILOSOPHY 10, 12, a reading course, PSYCHOLOGY 2 if not already taken.

Third Year PHILOSOPHY 14, 27 or 29, an optional course in Philosophy, a reading course.

Fourth Year PHILOSOPHY 27 or 29 not taken in the third year, two optional courses in Philosophy, a reading course.

A minor in Philosophy is ordinarily PHILOSOPHY 1, 10, 27 and two full courses chosen from the following: PHILOSOPHY 12, 14, 15, 23, 25, 29, 31, 33, one of which must be either PHILOSOPHY 12, 14 or 15.

COURSES OF INSTRUCTION

PHILOSOPHY 1. *Introduction to Philosophy.*

A general introduction to philosophy, in which special attention will be paid to the nature of proof, the criterion of truth, the determination of standards of conduct, and the function of philosophy in the modern world.

Text-books: Macmurray, *Interpreting the Universe* (Faber); Stebbing, *Modern Elementary Logic* (Methuen); Melden, *Ethical Theories* (Prentice-Hall). Extramural students taking PHILOSOPHY 1 will substitute Beardsley, *Practical Logic* (Prentice-Hall) for Stebbing, and add Lillie, *Introduction to Ethics* (Methuen).

Monday, Wednesday, Friday at 9

Professor DUNCAN

PHILOSOPHY 3. *Knowledge, Belief and Action.*

First term: a discussion of the distinction between "knowing" and "believing" with an examination of the conditions of "proof".

Second term: a discussion of the problem of action in public life. The writings of John Locke, J. S. Mill, and Karl Marx will be used as the basis of discussion.

Text-books: Ryle, *Dilemmas* (Cambridge Univ. Press); Locke, *Civil Government and Letter on Toleration* (Macmillan); Mill, *On Liberty* (Crofts Classics); Marx, *The Communist Manifesto* (Crofts Classics).

Monday, Wednesday, Friday at 11

Professor ESTALL and Mr WATTS

PHILOSOPHY 7. *History of Philosophy.*

A general account of the history of philosophy from the Greeks to the present day. Attention will be concentrated on a few of the more outstanding figures. First term: the philosophy of the Greeks and its impact on mediaeval Christendom. Second term: the development of modern philosophy and its interaction with scientific thought.

Text-books: Jones, *A History of Western Philosophy* (Harcourt Brace); Plato, *Last Days of Socrates* (Penguin); Descartes, *Discourse on Method and Meditations* (Liberal Arts Press).

Monday, Wednesday, Friday at 9

Mr WATTS and Professor ESTALL

PHILOSOPHY 10. *Problems of Philosophy.*

A study of some of the major problems in the field of philosophy. First term: the theory of knowledge. Second term: the theory of existence.

Text-books: Hospers, *An Introduction to Philosophical Analysis* (Prentice-Hall). Recommended for study but not for purchase: N. Kemp Smith, *Prolegomena to an Idealist Theory of Knowledge*; A. E. Taylor, *Elements of Metaphysics*; John Laird, *A Study in Realism*; A. J. Ayer, *Language, Truth, and Logic*.

Monday, Wednesday, Friday at 10

Dr CARTER

PHILOSOPHY 12. *History of Ancient Philosophy.*

A study of the three main periods of classical philosophy: the pre-Socratics; Socrates, Plato, Aristotle; and the post-Aristotelians. One of the main objects of this course is to trace the growth of the problems which traditionally constitute the field of philosophical study and to study the manner of their transmission to the modern world.

Text-books: Nahm, *Selections from Early Greek Philosophy* (Appleton-Century-Crofts); Plato, *Last Days of Socrates* (Penguin); Plato, *Meno* (Penguin); Plato, *Republic* (Penguin); Plato, *Theaetetus* (Liberal Arts Press); McKeon, *Introduction to Aristotle* (Modern Library).

Tuesday, Thursday at 11

Mr FELL

PHILOSOPHY 14. *History of Modern Philosophy.*

A study of modern philosophy from Bacon to Kant with special attention to the opposition between rationalists and empiricists.

Text-books: Locke, *Essay Concerning Human Understanding* (Everyman); Descartes, *Discourse on Method and Meditations* (Little Library of Liberal

Philosophy

Arts); Berkeley, *Selections* (Scribners); Hume, *Selections* (Scribners); Spinoza, *Selections* (Scribners); Kant, *Prolegomena* (Manchester University Press).

Monday, Wednesday, Friday at 11

Mr CARTER

PHILOSOPHY 15. *Recent Philosophy.*

A study of the main philosophical currents in the western world during the last hundred years. Among those whose writing will be considered are: Hegel, Marx, J. S. Mill, Comte, Spencer, Bergson, James, Dewey, Whitehead, Russell.

Not offered in 1957-8.

PHILOSOPHY 23. *Political Philosophy.*

An examination of the principal concepts and arguments employed in political writings, past and present. The nature of the state and other forms of social organization; sovereignty and toleration; rights and obligations; law, custom, and opinion; order and freedom; the method and subject-matter of political philosophy, and its relation to other social studies and to moral philosophy.

Text-books: Weldon, *States and Morals* (Murray); Weldon, *Vocabulary of Politics* (Pelican); Mabbott, *The State and the Citizen* (Hutchinson's).

Tuesday and Thursday at 1.30

Mr WATTS

PHILOSOPHY 25. *Existentialism.*

A critical discussion of the philosophy of Existentialism, beginning with Kierkegaard.

Text-books: Kaufmann, *Existentialism* (Meridian); Kierkegaard, *Fear and Trembling* (Anchor); Marcel, *Philosophy of Existence* (Harvill); Collins, *The Existentialists* (Regnery).

Monday, Wednesday, Friday at 1.30

Professor ESTALL

PHILOSOPHY 27. *Moral Philosophy.*

The general approach will be as follows: (a) Critical study of the historical development of moral and social theory; (b) Examination of ethical issues in contemporary life.

Text-books: Aristotle, *Nicomachean Ethics* (World's Classics, Oxford); Plato, *Republic* (Penguin); others to be announced.

Monday, Wednesday, Friday at 11

Professor DUNCAN

PHILOSOPHY 29. *Logic.*

A study of the problems of demonstrative and problematic inference.

Text-books: Quine, *Methods of Logic* (Holt).

Hours to be arranged.

Professor ESTALL

PHILOSOPHY 31. *Seminar Course.*

Systematic study of the works of some one philosopher or school.

1957-58: Linguistic Analysis.

Text-books: to be announced.

Hours to be arranged.

Professor DUNCAN

PHILOSOPHY 33. *Kant and post-Kantian Idealism.*

A systematic study of the logical and metaphysical aspects of the thought of Kant and the post-Kantian idealists.

Text-books: Kant, *Critique of Pure Reason* (Macmillan); Hegel, *Selections* (Scribner's); Hegel, *Philosophy of Hegel* (Modern Library).

Hours to be arranged.

Dr CARTER

Reading Courses

PHILOSOPHY R1. *Metaphysics.*

Pepper, *World Hypotheses*; Collingwood, *Essay on Metaphysics*; Stout, *Mind and Matter*; Ryle, *Concept of Mind*.

PHILOSOPHY R2. *Ethics.*

Ross, *Foundations of Ethics*; Macbeath, *Experiments in Living*; Schlick, *Problems of Ethics*; Bergson, *Two Sources of Morality and Religion*; Morrison, *Freedom and Contemporary Society*.

PHILOSOPHY R3. *Logic.*

Mill, *System of Logic* (Books III and VI); Bosanquet, *Essentials of Logic*; Poincaré, *Foundations of Science*; Whitehead, *Introduction to Mathematics*.

PHILOSOPHY R4. *Later Philosophy of Plato.*

Cornford, *Plato and Parmenides*; A. E. Taylor, *Plato's Parmenides* (translation and introduction); Cornford, *Plato's Theory of Knowledge*; Hackforth, *Plato's Examination of Pleasure*; Ross, *Plato's Theory of Ideas*.

PHILOSOPHY R5. *Aesthetics.*

Carritt, *Introduction to Aesthetics*; Croce, *Essentials of Aesthetics*; Collingwood, *Principles of Art*; Alexander, *Beauty and Other Forms of Value*; Pepper, *Principles of Art Appreciation*.

PHILOSOPHY R6. *The History of Science.*

Butterfield, *Origins of Modern Science*; Raven, *Science and Religion*; Sher-
rington, *Man on his Nature*; Whitehead, *Science and the Modern World*.

Substitutions in reading courses may be arranged in consultation with the department to meet the special needs of individual students.

The examination in at least one of the reading courses will take the form of an essay of approximately 8,000 words. A student may opt to write an essay in each reading course.

GRADUATE COURSES

For information about graduate courses in Philosophy, see the *Calendar of Graduate Studies*.

Physical and Health Education

F. L. BARTLETT, B.A., *Professor, and Director of the School of Physical and Health Education*

J. F. EDWARDS, M.A.(P.E.), *Associate Professor*

F. TINDALL, A.B., *Assistant Professor*

MARION ROSS, M.A., *Assistant Professor*

A. L. LENARD, B.A., B.P.H.E., *Lecturer*

DOROTHY LEGGETT, M.Sc., *Lecturer*

ANNA C. TURNBULL, B.Sc.(P.E.), *Lecturer*

K. N. HARRIS, *Instructor*

R. A. GOW, *Instructor in Swimming*

With the exception of those excused by the Medical Officer because of ill-health, all first year students are required to take two hours of Physical Training per week during the whole of the school year. The work varies throughout the year and as much time as possible is spent outdoors in the early fall and spring. This consists of touch football, cross-country running, track and field, and soft-ball. Every student is given a swimming test and the non-swimmers are automatically placed in an instruction group.

Indoor work follows with cooler weather and consists of swimming, setting-up exercises, and apparatus work on the parallel bars, the horse, the mats, and the horizontal bar. The winter term brings basketball, indoor softball, group games, and indoor track and field. Each student is encouraged to learn something about all these activities and a wide variance of exercise is achieved.

Equivalent credit is given for attendance at regular organized swimming and life-saving classes, and for playing on university teams in track, football, hockey, water polo, gymnastics, tennis, and boxing and wrestling. Such credit *terminates with the regular scheduled programme of activities of each respective club*, when students will rejoin the weekly gymnasium classes or engage in any other of the sports listed above.

Classes for Arts Students

At the time of registration each new student must enroll in a class of physical education. For students in Arts these classes are held in the main gymnasium building as follows:

Men (a) Monday and Wednesday 3.30-4.30

(b) Tuesday and Thursday 1.30-2.30

(c) Wednesday and Friday 2.30-3.30

Women (a) Monday and Wednesday 11.00-12.00

(b) Tuesday and Thursday 11.00-12.00

(c) Tuesday and Thursday 2.30-3.30

Freshmen in Arts whose academic time-table conflicts with the above hours will be placed in other classes on application to the Director of Physical Education.

Physics

- B. W. SARGENT, M.B.E., M.A., Ph.D., F.R.S.C., *R. Samuel McLaughlin Research Professor of Physics and Head of the Department*
 E. E. WATSON, M.Sc., Ph.D.,
Professor and Chairman of Undergraduate Studies
 H. M. CAVE, M.A., Ph.D., *Professor*
 H. W. HARKNESS, B.Sc., B.A., M.Sc., Ph.D., *Professor*
 D. T. ROBERTS, B.Sc., Ph.D., *Associate Professor*
 G. N. WHYTE, M.Sc., A.M., Ph.D., *Associate Professor (1956-7)*
 G. A. HARROWER, B.Sc., M.Sc., Ph.D., *Associate Professor*
 H. M. LOVE, B.Sc., Ph.D., *Associate Professor*
 A. R. JOHNSTON, B.Sc., Ph.D., *Assistant Professor*
 J. R. ALLEN, M.A., *Assistant Professor*
 H. W. TAYLOR, M.Sc., Ph.D., *Assistant Professor*
 P. A. PUHACH, M.Sc., Ph.D., *Lecturer*
 MADELEINE WATSON, B.Sc., A.M., *Demonstrator*
 V. R. HENRY, M.A., *Demonstrator*
 P. A. HERZBERG, *Robert Waddell Tutor in Physics*

PHYSICS 1 covers the broad field of Physics and should be taken by students who wish to take a single course in Physics. PHYSICS 3 is a continuation of PHYSICS 1 at a higher level, suitable for those who have obtained at least second class standing in Grade XIII Physics or who have passed PHYSICS 1. PHYSICS 2 is the first of the specialized courses and may be taken by students who have passed PHYSICS 1 or have obtained honours in the Grade XIII examinations as follows: first class in either Mathematics or Physics, or second class in both Mathematics and Physics. Students who plan to take the Honours Course in Physics should take PHYSICS 2 in their first year. PHYSICS 2 is prerequisite to all other courses in Physics, but exceptional students may take PHYSICS 2 and PHYSICS 11 concurrently with the consent of the Chairman of Undergraduate Studies in Physics.

Candidates offering Physics as one of three subjects of concentration on the General Course take PHYSICS 1 (*Introductory physics*), PHYSICS 3 (*General physics*), and either PHYSICS 2 (*Electricity and magnetism, and light*) or PHYSICS 11 (*Mechanics*). If four courses in Physics are required, both PHYSICS 2 and PHYSICS 11 are taken.

Physics

THE HONOURS COURSE IN PHYSICS

Candidates planning to take the Honours Course in Physics are advised to offer Grade XIII subjects as follows: English, a language, Mathematics (3 papers), Physics, a fifth subject which should be Chemistry or Biology.

The programme for the degree is as follows:

(a) The Major

- PHYSICS 2—*Electricity and Magnetism, and Light*
- 11—*Mechanics*
- R1—*Sound*
- 10A—*Dynamics*
- 12B—*Introduction to the Mathematical Theory of Electricity and Magnetism*
- 13B—*Introduction to Modern Physics*
- 14A—*Heat and Thermodynamics*
- 15—*Theory and Application of Electronics; or*
- R2—*Electronics*
- 16A—*Mechanics of Rigid and Elastic Bodies*
- 17B—*Physical Optics, and Spectroscopy*
- 22—*Advanced Laboratory Course*
- R3—*Evolution of Physics*

- TWO OF PHYSICS 19—*Mechanics of Deformable Media*
- 20B—*Electromagnetic Theory*
- 21A—*Kinetic Theory of Gases*

When the minor is in Mathematics, one course in Physics or Mathematics or another science and one free option (German is recommended) must be taken in addition to the courses prescribed above. The choice should be made after consultation with the Chairman of Undergraduate Studies in Physics. When the minor is Chemistry the two additional courses are MATHEMATICS 2 (*Differential and Integral Calculus*) and MATHEMATICS 13 (*Calculus and Differential Equations*). When the minor is Biology, two of the Physics half courses, 16A, 17B, 20B, 21A, are to be omitted and replaced by MATHEMATICS 2 and MATHEMATICS 13. In addition CHEMISTRY 2 (*General Chemistry*) and CHEMISTRY 12 (*Organic Chemistry*) must be taken.

(b) The Minor

- MATHEMATICS 2, 10, 13, 19; or
- CHEMISTRY 2, 11, 12, 14; or
- BIOLOGY 2, 3, 45, PHYSIOLOGY 10.

A candidate who wishes to take some other subject as minor may do so with the consent of the Department of Physics.

(c) General courses to complete the work for degree: ENGLISH 2, PHILOSOPHY 1.

(d) Two general examinations in Physics.

PHYSICS IN OTHER HONOURS COURSES

For information about the General Honours Course in Science for Teachers and the course of study leading to the Interim High School Assistant's Certificates, Type A, in Mathematics and Physics and in Science at the Ontario College of Education, see page 98.

When Physics is the minor associated with Mathematics as major, the minor consists of PHYSICS 2, 11, 10A and 12B, 13B and 14A.

When Physics is the minor associated with Chemistry as major, the minor consists of PHYSICS 2, 11, 13B and 14A, and MATHEMATICS 13 (*Calculus and Differential Equations*).

When Physics is one of the three special subjects on the General Honours Course the prescription of work is as follows: PHYSICS 2, 11, 13B, 14A, R1, and MATHEMATICS 2 (*Differential and Integral Calculus*). If possible students should select MATHEMATICS 13 (*Calculus and Differential Equations*) as a free option.

For information about scholarships in Physics, see page 61.

COURSES OF INSTRUCTION

PHYSICS 1. *Introductory Physics: Mechanics, Properties of Matter, Heat, Wave-motion, Sound, Light, Electricity, Magnetism, and Atomic Structure.*

Many of the fundamental principles of Physics are discussed and illustrated by demonstrations and by experiments in the laboratory.

This course is sufficiently broad and complete to provide a satisfactory unit of knowledge for students who wish to take only a single course in Physics. The course is also sufficiently detailed and quantitative to provide an adequate background for students who intend to take further courses in Physics.

Text-book: H. E. White, *Modern College Physics*, 3rd edn. (Van Nostrand).
Lectures—Tuesday, Thursday, Saturday at 9

Laboratory—Tuesday, 1.30-3.30 or Wednesday, 1.30-3.30 Professor LOVE

PHYSICS 2. *Electricity and Magnetism, and Light.*

Electricity and Magnetism (First Term). An elementary quantitative treatment of electricity and magnetism. Light (Second Term). Reflection, refraction, dispersion, interference, diffraction and polarization of light are discussed from the point of view of physical optics. Some geometrical optics is included.

Physics

Prerequisite—PHYSICS 1 or Honours standing in Grade XIII as follows: first class in either Mathematics or Physics, or second class in both Mathematics and Physics. Although not prerequisite, MATHEMATICS 2 will be found very useful in this course, even if taken concurrently. Text-books: F. W. Sears and M. W. Zemansky, *University Physics, Electricity, Magnetism and Optics* (Addison-Wesley); J. K. Robertson, *Introduction to Optics, Geometrical and Physical* (Van Nostrand).

Lectures—Tuesday, Thursday, Saturday at 9

Laboratory—Thursday, 1.30-3.30 or Thursday, 3.30-5.30 or Friday, 1.30-3.30
Professors WATSON and CAVE

PHYSICS 3. *General Physics.*

In this course selected topics in mechanics, properties of matter, heat, wave-motion, sound, light, electricity, magnetism, and atomic structure are discussed at a more advanced level than that in PHYSICS 1. Modern ideas of atomic and nuclear physics are introduced.

Prerequisite—PHYSICS 1 or at least second class standing in Grade XIII Physics. Text-book: J. S. Marshall and E. R. Pounder, *Physics* (Macmillan).

Lectures—Tuesday, Thursday, Saturday at 11

Laboratory—Friday, 1.30-3.30

PHYSICS 11. *Mechanics.*

Mechanics of mass points, including motion in a circle, simple harmonic motion, etc.; plane mechanics of rigid bodies; elementary elasticity and fluid flow.

Prerequisite—PHYSICS 1, PHYSICS 2, and MATHEMATICS 2. Students on an Honours Course with Grade A standing in PHYSICS 1 and Grade B standing in MATHEMATICS 2 may take PHYSICS 2 and PHYSICS 11 in the same year. Text-books: N. H. Frank, *Introduction to Mechanics and Heat* (McGraw-Hill); D. N. Shorthose, *Properties of Matter* (William Heinemann).

Lectures—Monday and Friday at 9

Laboratory and Problem Period—Wednesday, 1.30-4.30 or 2.30-5.30

Professor CAVE

PHYSICS 10A. *Dynamics.*

Selected topics in particle dynamics such as motion subject to frictional forces, free and forced oscillations, coupled oscillators, motion under central forces including planetary motion and nuclear scattering of charged particles, laws of motion in vector notation, motion with respect to moving systems of reference.

Prerequisite—PHYSICS 2 (62 per cent) and PHYSICS 11 (55 per cent). Text-book: K. R. Symon, *Mechanics* (Addison-Wesley).

Lectures—Tuesday, Thursday, Saturday at 10

Laboratory—Tuesday, 1.30-3.30

Professor CAVE

PHYSICS 12B. *Introduction to the Mathematical Theory of Electricity and Magnetism.*

The electric and magnetic fields; simple applications of the fundamental laws of electromagnetic theory; magnetic media; alternating currents, vector methods, complex and polar operators.

Prerequisites—PHYSICS 2 (62 per cent) and PHYSICS 11 (55 per cent). Text-book: N. H. Frank, *Introduction to Electricity and Optics*, 2nd edn. (McGraw-Hill).

Lectures—Tuesday, Thursday, Saturday at 10

Laboratory—Tuesday, 1.30-3.30

Professor WATSON

PHYSICS 13B. *Introduction to Modern Physics.*

The special theory of relativity, discovery of the electron, photoelectric effect, thermionic emission, quantum theory, the nuclear atom and Bohr's theory of spectral lines, discovery of X-rays, the crystal diffraction grating, emission spectra and Moseley's law, scattering and absorption of X-rays, ionization currents in gases, radioactivity.

Prerequisites—PHYSICS 2 (62 per cent) and MATHEMATICS 2. Text-book: F. K. Richtmyer, E. H. Kennard and T. Lauritsen, *Introduction to Modern Physics*, 5th edn. (McGraw-Hill).

Lectures—Monday, Wednesday, Friday at 11

Professor SARGENT

Laboratory—Thursday, 1.30-3.30

Professor CAVE

PHYSICS 14A. *Heat and Thermodynamics.*

This course is an introduction to thermodynamics, starting with a discussion of the basis of thermometry. The equations of thermodynamics are developed and applied to examples in the fields of physics, chemistry and engineering.

Prerequisites—PHYSICS 2 (62 per cent) and MATHEMATICS 2.

Text-books: M. W. Zemansky, *Heat and Thermodynamics*, 3rd edn. (McGraw-Hill); R. L. Weber, *Heat and Temperature Measurement* (Prentice-Hall).

Lectures—Monday, Wednesday, Friday at 11

Laboratory—Thursday, 1.30-3.30

Professor HARKNESS

PHYSICS 15. *Theory and Application of Electronics.*

The following topics are dealt with in this course: the behaviour of ions and electrons in electric and magnetic fields; energy levels in metals and semiconductors; thermionic, field, secondary and photoelectric emission; the fundamentals, characteristics and applications of transistors and of gas, vapour, vacuum and photoelectric tubes; fluorescent lamps.

Prerequisites—55 per cent in each of PHYSICS 11, 13B and 14A.

Lectures—First Term: Monday and Thursday at 9, Friday at 1.30

Second Term: Monday at 9, Thursday at 10

Laboratory—First Term: Friday, 2.30-4.30

Second Term: Wednesday, 1.30-3.30 or 3.30-5.30

Department of Electrical Engineering, Fleming Hall

Professor POLLOCK

PHYSICS 16A. *Mechanics of Rigid and Elastic Bodies.*

Mechanics of systems of particles; Lagrangian and Hamiltonian formulations of mechanics; kinematics and dynamics of rigid motion, tops and gyroscopes.

Mechanics of deformable bodies with application to seismic waves. The methods of matrix representation of linear transformations on a vector space are developed and used in this course.

Prerequisite—PHYSICS 10A (55 per cent). Text-book: H. Goldstein, *Classical Mechanics* (Addison-Wesley).

Monday, Wednesday, Friday at 11

Dr PUHACH

Physics

PHYSICS 17B. *Physical Optics, and Spectroscopy.*

Diffraction and interference phenomena, detailed analyses of optical instruments such as gratings, the echelon grating, Michelson's interferometer, Fabry and Perot interferometer, the étalon, Lummer plate. Polarization and double refraction.

A discussion of the principal features of atomic spectra and their explanation on the basis of wave mechanics. Topics include: wave properties of matter and an introduction to wave mechanics, Bohr's theory and the wave-mechanical theory of the Hydrogen atom, energy level schemes, shell structure and the periodic table, selection rules for radiative transitions, vector model of the many-electron atom, multiplet structure, Zeeman and Paschen-Back effects, Stark effect, hyperfine structure, intensity rules, shape of spectral lines.

Prerequisites—55 per cent in each of PHYSICS 10A, 12B, and 13B.

Lectures—Tuesday, Thursday at 11, Monday at 4.30

Professors HARKNESS and LOVE

PHYSICS 18. *Introductory Nuclear Physics.*

The following topics are discussed: radioactivity; detection and absorption of radiations; nuclear reactions induced by photons, neutrons and charged particles; nuclear structure, fusion and fission; the slowing down and diffusion of neutrons; the chain reaction; theory, design and descriptions of nuclear reactors.

Prerequisites—55 per cent in each of PHYSICS 10A, 12B, and 13B.

Text-books: Irving Kaplan, *Nuclear Physics* (Addison-Wesley); R. Stephenson, *Introduction to Nuclear Engineering* (McGraw-Hill).

Lectures—First Term: Tuesday at 1.30, Thursday at 9

Second Term: Wednesday at 1.30, Friday at 10

Professor SARGENT

PHYSICS 19. *Mechanics of Deformable Media.*

The fundamental equations for the equilibrium and motion of fluids and deformable solids are derived and discussed. Topics include: elastic moduli, stresses, strains and vibrations of elastic bodies, elastic waves; introduction to hydro- and aeromechanics including theory of irrotational and vortex motion, and influences of compressibility and viscosity; an outline of the relationship of the mechanical properties of materials to their atomic structure.

Prerequisite—PHYSICS 10A (55 per cent).

Lectures—One hour a week, to be arranged.

Professor ALLEN

PHYSICS 20B. *Electromagnetic Theory.*

The fundamental field equations and properties are discussed, then Maxwell's equations are derived and applied to the reflection, refraction and dispersion of waves. Vector analysis and rationalized m.k.s. units are used.

Prerequisites: 55 per cent in each of PHYSICS 10A, 12B, and 13B. Textbook: H. H. Skilling, *Fundamentals of Electric Waves* (Wiley).

Monday, Wednesday, Friday at 11

Professor HARROWER

PHYSICS 21A. *Kinetic Theory of Gases.*

Maxwellian distribution of velocities, free path phenomena (viscosity, thermal conductivity, diffusion), Brownian motion, classical and quantum statistics, molecular spectroscopy and the specific heat capacities of diatomic gases and of solids (including Debye's theory).

Physiology

Prerequisites—55 per cent in each of PHYSICS 10A, 12B, 13B, and 14A. Text-book: F. W. Sears, *An Introduction to Thermodynamics, the Kinetic Theory of Gases, and Statistical Mechanics*, 2nd edn. (Addison-Wesley).

Tuesday and Friday at 10, Thursday at 11

Professor SARGENT

PHYSICS 22. *Advanced Laboratory Course.*

Mechanics, electricity and magnetism, optics, X-rays, radioactivity and nuclear physics. This is the equivalent of a whole lecture course.

Laboratory—Thursday, 1.30-4.30, and Friday, 1.30-4.30

Professors SARGENT, HARKNESS, LOVE and TAYLOR

Reading Courses

PHYSICS R1. *Sound.*

M. Y. Colby, *Sound Waves and Acoustics* (Holt).

Selected articles in acoustical journals. Students should consult Professor Cave for assignments.

Professor CAVE

PHYSICS R2. *Electronics.*

A. O. Williams, *Electronics* (Van Nostrand)

Professor ROBERTS

PHYSICS R3. *Evolution of Physics.*

M. von Laue, *History of Physics* (Academic Press); A. Einstein and L. Infeld, *The Evolution of Physics* (Simon and Schuster).

Professor HARKNESS

The principal Physics journals and books relating to the lectures and the laboratory work are kept in the library of the Physics Department and in the University Library, where they may be freely consulted by the students. Certain of these may be borrowed for limited periods by making application to the librarian in charge.

GRADUATE COURSES

For information about graduate courses in Physics, see the *Calendar of Graduate Studies*.

Physiology

G. H. ETTINGER, M.B.E., B.A., M.D., C.M., F.R.S.C., *Professor*

J. D. HATCHER, M.D., Ph.D., *Associate Professor*

R. E. SEMPLE, M.A., Ph.D., *Associate Professor*

MARGARET E. M. SAWYER, M.A., Ph.D., *Assistant Professor*

Students in the Honours Course in Biochemistry, the Honours Course in Biology for Zoologists, the Course in Physical and Health Education, and the Course for Nurses qualifying for a Diploma in Teaching and

Physiology

Supervision are required to take PHYSIOLOGY 10. Students taking Biology as one of the subjects of concentration on the General Course may include PHYSIOLOGY 10 in the Biology prescription.

A student in an Honours Course who, having the necessary prerequisites, wishes to take PHYSIOLOGY 20 or PHYSIOLOGY 30 should consult the head of the department.

THE HONOURS COURSE IN PHYSIOLOGY

Candidates planning to take the Honours Course in Physiology are advised to offer Grade XIII subjects as follows: English, Mathematics (3 papers), French or German, Chemistry and either Biology or Physics.

The programme for the degree is as follows:

- (a) BIOLOGY 1—*General Biology*, unless candidate has Grade XIII standing in Biology
3—*General Zoology*
16—*Comparative Vertebrate Anatomy*
BIOCHEMISTRY 16—*Introduction to Biochemistry*
20—*Advanced Biochemistry*
CHEMISTRY 2—*General Chemistry*
11—*Analytical Chemistry*
12—*Organic Chemistry*
14—*Physical Chemistry*
MATHEMATICS 2—*Differential and Integral Calculus*
PHYSICS 1—*Mechanics, Properties of Matter, Heat, Wave Motion, Sound, Light, Electricity, and Magnetism*, unless candidate has Grade XIII standing in Physics
PHYSICS 2—*Electricity and Magnetism and Light*
PHYSIOLOGY 10—*Human Physiology*
25—*General and Cellular Physiology*
P—*Problem in Physiology*
R—*Reading Course in Physiology*
- (b) Compulsory general courses to complete the work for degree: ENGLISH 2, PHILOSOPHY 1, a free option if a course is needed to make up the required total of eighteen courses.
- (c) Two comprehensive examinations in Physiology, one written and one oral.

COURSES OF INSTRUCTION

PHYSIOLOGY 10. *Human Physiology*.

This course in human physiology covers, in a general way, circulation, respiration, metabolism, digestion, excretion, endocrine secretion, and the central nervous system. Consideration is given to the structure of organs and systems, and to

biochemical processes as well as physiological function. Special emphasis is placed on the mechanisms involved in each case, and on their integration in the organism as a whole. In the laboratory the student carries out exercises on surviving tissues and on mammals, which illustrate the principles discussed in the lectures. These exercises are supplemented by demonstrations and films.

Text-books: Langley and Cheraskin, *The Physiology of Man*; Bell, Davidson and Scarborough, *Textbook of Physiology and Biochemistry*; Best and Taylor, *The Living Body*.

Lectures—Tuesday and Thursday at 11

Laboratory—Thursday or Friday, 1.30-4.30

Professor SAWYER

PHYSIOLOGY 20. *Medical Physiology*.

This course is taken with students in the Faculty of Medicine and lasts for thirty weeks. Topics covered include: the dynamics of muscle and nerve, the nervous system, circulation, respiration, digestion, excretion, and endocrine function. The subject is treated systematically and the lecture course is supplemented by demonstrations and by work in the laboratory. Special emphasis is laid on the applications of Physiology to clinical study. Demonstrations in Clinical Physiology are presented in conjunction with the Department of Medicine.

Prerequisites—BIOLOGY 16, BIOLOGY 20. The student must have taken, or be taking concurrently, BIOCHEMISTRY 18. Text-books: Evans, *Human Physiology*; Bell, Davidson and Scarborough, *Text-book of Physiology and Biochemistry*; Best and Taylor, *Physiological Basis of Medical Practice*.

Lectures—Monday at 10, Tuesday and Thursday at 9, Friday at 10

Laboratory—Monday or Tuesday, 1.30-5.30

Dean ETTINGER

PHYSIOLOGY 25. *General and Cellular Physiology*.

An enquiry into the nature and mechanism of living matter. The course includes studies under the following headings: the cell as a physiological unit, the significance of water and electrolytes, excitation and response, reproduction and development, metabolism.

Prerequisites: PHYSICS 1, PHYSIOLOGY 10 or 20 and BIOCHEMISTRY 16. (BIOCHEMISTRY 16 may be taken concurrently.) Text-books: Davson, *A Text-book of General Physiology*; Heilbrunn, *An Outline of General Physiology*.

Professor SEMPLE

PHYSIOLOGY 30. *Advanced Physiology*.

An advanced course for Honours and Graduate students in which a few topics are studied intensively.

Prerequisite—PHYSIOLOGY 10 or 20.

Hours to be arranged.

Professors HATCHER and SEMPLE

READING COURSES

PHYSIOLOGY R

The candidate is assigned reading in a specific field of physiology and will be required to prepare and submit a concise written report at the end of the session. In addition, the candidate must present orally the subject matter of his report to a seminar group.

Politics and Economics

PHYSIOLOGY P

The candidate is assigned a problem in physiology on which he must work at least two afternoons a week in the laboratory. At the end of the term the candidate must submit a concise written report as well as present orally his results to a seminar group.

GRADUATE WORK

For information about graduate work in Physiology, see the *Calendar of Graduate Studies*.

Political and Economic Science

- C. A. CURTIS, B.A., Ph.D., F.R.S.C., *The Sir John A. Macdonald Professor of Political and Economic Science and Head of the Department of Political and Economic Science*
- F. A. KNOX, B.A., F.R.S.C., *Professor of Economics*
- R. G. H. SMAILES, B.Sc., (Econ), F.C.A., *Professor of Commerce and Director of the School of Commerce and Administration*
- J. A. CORRY, LL.B., B.C.L., LL.D., F.R.S.C.,
The Hardy Professor of Political Science and Vice-Principal
- J. C. CAMERON, M.Com.,
Professor and Head of the Department of Industrial Relations
- J. L. McDOUGALL, M.A., *Professor of Commerce*
- W. G. LEONARD, F.C.A., *Professor of Commerce*
- K. G. CRAWFORD, M.A., *Professor of Political Science and Director of the Institute of Local Government*
- L. G. MACPHERSON, B.A., F.C.A., *Professor of Commerce*
- J. E. HODGETTS, M.A., Ph.D., *Professor of Political Science*
- C. H. CURTIS, M.A., *Associate Professor of Industrial Relations*
- M. C. URQUHART, B.A., *Associate Professor of Economics*
- J. E. SMYTH, M.Com., F.C.A., *Associate Professor of Commerce*
- G. ROSENBLUTH, B.A., Ph.D., *Associate Professor of Economics*
- R. J. HAND, B.Com., M.B.A., *Assistant Professor of Commerce*
- D. W. SLATER, B.Com., B.A., M.A., *Assistant Professor of Economics*
- J. MEISEL, M.A., *Assistant Professor of Political Science*
- E. J. BENSON, B.Com., C.A., *Assistant Professor of Commerce*
- H. J. THORBURN, B.A., A.M., *Assistant Professor of Political Science*
- B. J. B. GALVIN, C.A., *Assistant Professor of Commerce*
- D. Q. INNIS, B.A., *Lecturer in Geography*
- G. SLASOR, B.A., *Lecturer in Economics*
- I. A. STEWART, M.A.
Lecturer in Economics and Assistant Director of Banking Courses
- F. J. L. YOUNG, M.A., *Lecturer in Industrial Relations*

S. FYFE, M.A., *Lecturer in Local Government*

C. K. MAY, B.Com., *Lecturer in Commerce*

GAIL STEWART, B.A., M.Sc.(Econ.), *Senior Tutor in Economics 4*

Courses in Politics, Economics, Sociology, Geography and Commerce and Administration are given in this department. The graduate courses offered are listed in the Calendar of Graduate Studies.

For information about scholarships in Political and Economic Science see pages 62-64.

Students taking only one course in this department may choose ECONOMICS 1 or 4, POLITICS 2 or GEOGRAPHY 1.

Any of the following prescriptions may be altered with the permission of the department.

THE GENERAL COURSE

The Department of Political and Economic Science may be regarded as a double department for purposes of the General Course and students may select either one or both of Economics and Politics as special subjects. Groups of *three* courses may be made up as follows:

- (a) ECONOMICS 1 or 10; ECONOMICS 4 and one of ECONOMICS 11, 12, 13.
- (b) ECONOMICS 1 or 10; ECONOMICS 4 and one of POLITICS 2, SOCIOLOGY 1 and GEOGRAPHY 1.
- (c) ECONOMICS 4; GEOGRAPHY 1 and 2.
- (d) One of ECONOMICS 1, 4, 10; POLITICS 2; one of POLITICS 30, 31, 36, 39, or SOCIOLOGY 1.
- (e) GEOGRAPHY 1, 2, and 12.
- (f) When Politics *without Economics* is one of the three fields of concentration: POLITICS 2 and 30; one of POLITICS 30, 31, 36, 39, SOCIOLOGY 1.

Groups of *four or five* courses may be made up as follows:

- (g) ECONOMICS 1, 4, 12; one or two of ECONOMICS 11, 13, 15, 18, 20, 21, 23, 24.
- (h) POLITICS 2; POLITICS 30; and two or three of POLITICS 31, 36, 39, SOCIOLOGY 1, or other courses with the permission of the Department.

THE HONOURS COURSES

Students applying for admission to the Honours Course in Economics must have Grade B standing in ECONOMICS 1 or ECONOMICS 4 or ECONOMICS 10. Those applying for admission to the Honours Course in Politics must have Grade B standing in POLITICS 2.

Politics and Economics

For purposes of the Honours Course, the Department of Political and Economic Science may be regarded as a double department; a student may take a major in Economics and a minor in Politics, or a major in Politics and a minor in Economics; or may use Economics and Politics as two of the subjects of concentration on the General Honours Course.

Students preparing for the Honours Course in Economics are advised to take Grade XIII subjects as follows: English, a language, History, Mathematics (3 papers), a science.

(a) *The General Honours Courses*

Students taking Economics as one of the main subjects of the General Honours Course must take ECONOMICS 1 or 10; ECONOMICS 4 and 12; two other courses in Economics; ECONOMICS 25 and READING COURSE 1, which together count as one course.

Students taking Politics as one of the main subjects of the General Honours Course must take POLITICS 2, 30, 31, 32; one of POLITICS 35, 36, 37, 39; and POLITICS R1.

(b) *The Specialized Honours Courses*

- (1) *The Major in Economics*; the minor in one of Politics, History, Philosophy, Psychology, Mathematics. (See (4) and (5) below.)

The usual order in which courses should be taken is as follows:

First year: ECONOMICS 1 and 4; the first course in the minor;
ENGLISH 2; MATHEMATICS 2 or POLITICS 2.

Second year: ECONOMICS 12, 13; ECONOMICS 11 or 15; ECONOMICS 10, if ECONOMICS 1 has not been taken; two courses in the minor.

Third year: ECONOMICS 11 or 15; 20; R2; two courses in the minor.

Fourth year: ECONOMICS 21; 24; 25 and R1; R3 (thesis). Two general examinations in Economics. (Graduate courses may be substituted for ECONOMICS 21 and 24 with the permission of the Department.)

Students who wish to enter upon a major in Economics in their second year, having taken in their first year no Economics courses or only one of ECONOMICS 1 or 4, may have an alternative programme planned for them by the Department which will usually permit them to graduate in the spring of their fourth year.

(2) *The Major in Politics.*

First year: POLITICS 2; ECONOMICS 1 or 4; the first course in the minor; ENGLISH 2; PHILOSOPHY 1.

Second year: POLITICS 30; 31 or 36; two courses in the minor; SOCIOLOGY 1 or ECONOMICS 10 if ECONOMICS 1 has not been taken.

Third and Fourth years: POLITICS 31 or 36; 35 and/or 39; 32, 37, R1, R2, R3; two courses in the minor.

Two general examinations in Politics.

At the end of the second year, programmes for the third and fourth years must be approved by the Department which may, in special cases, vary the prescription as outlined above. A student whose minor is Economics cannot use any courses in Economics as part of the major in Politics and must therefore consult the Department about substitutions.

(3) *The Course in Public Administration.*

The prescription for honours in Public Administration is as follows:

POLITICS 2, 30, 31, 37, 39, R1, R2, R3; ECONOMICS 1, 4, 12 and two other Economics courses; one further course in Politics or Economics numbered over 10; and three of PHILOSOPHY 1, PSYCHOLOGY 2, HISTORY 3, SOCIOLOGY 1; ENGLISH 2.

Two general examinations in Politics.

(4) *Minors in the Department of Political and Economic Science.*

A minor in Economics normally consists of ECONOMICS 1 or 10; ECONOMICS 4, 12 and two other courses in Economics. A minor in Politics normally consists of POLITICS 2, 30, 31; and any two of POLITICS 32, 35, 36, 37, 39.

The minor for students preparing for admission to the Course leading to the Interim High School Assistant's Certificate, Type A in History at the Ontario College of Education consists of ECONOMICS 1 or 10; POLITICS 2; ECONOMICS 4; and two other courses in Economics or Politics.

(5) *Minors in other departments.*

PHILOSOPHY 1, 10, 27 and two advanced courses (See page 169).

HISTORY 3 or 5 or 6, 12; 13 or 19, and one other course numbered over 10.

MATHEMATICS 2, 10, 13 and 19 or 20.

PSYCHOLOGY 2, MATHEMATICS 3A and 3B; PSYCHOLOGY 15, 31, and one other lecture course.

A candidate who wishes to take some other subject as minor may do so, with the consent of the Department of Political and Economic Science.

INSTITUTE OF LOCAL GOVERNMENT

The Institute of Local Government is a branch of the Department of Political and Economic Science. Its purpose is to give sustained study and analysis to the problems of local government including the relations between the municipalities and the Provincial and Dominion governments. The results of research undertaken by it are made available in bulletins as occasion warrants.

The Institute also publishes from time to time bulletins containing data of interest to municipal governments and generally acts as a clearing house for information about the financial and administrative practices of municipal governments. Instruction in local government is offered and students wishing to prepare themselves for posts with municipalities will find association with the Institute a useful preparation.

COURSES OF INSTRUCTION

Economics

ECONOMICS 1. *Elementary Economic Theory.*

An introductory course in economic principles. Main attention is given to explaining the nature of economic interrelations within a market exchange economy, the way in which production of the various commodities is determined, the determinants of the use of labour, capital and natural resources in production, and the way in which income is shared among the various elements contributing to production. The course is directed primarily toward the explanation of the working of a market exchange economy rather than a description of the institutions of the economy.

Text-book: Samuelson, *Economics*, 3rd Edition (McGraw-Hill, 1955).

Monday, Wednesday, Friday at 11

Professor URQUHART

ECONOMICS 4. *Introduction to Economics.*

A study of the economic factors affecting the distribution of population and standards of living in such mainly agricultural economies as those of the Orient, of Europe before 1800 and of colonial North America; of the "industrial revolution" in Europe and the process of industrialization in the United States, Russia, Japan and "under-developed" countries of today; and of the effects of industry on agriculture and on standards of living.

Text-books: Jones and Darkenwald, *Economic Geography* (Macmillan, 1954); Heaton, *Economic History of Europe* (Harper, 1948); *Oxford Economic Atlas of the World* (Shortened Edition, 1955).

Tuesday, Thursday at 9; Monday, Tuesday, Wednesday, Thursday at 1.30 or 2.30 (in Sections).

Professor KNOX

ECONOMICS 10. *Principles of Economics.*

A general course in economic analysis in which an attempt is made to develop a working knowledge of economic principles and their application.

Politics and Economics

Prerequisite—Grade B in ECONOMICS 4 or the permission of the Department.
Text-books: Burns, Neal and Watson, *Modern Economics*.
Monday, Wednesday, Friday at 9 Professor C. A. CURTIS

ECONOMICS 11. *Introduction to Statistics*.

A general course in the descriptive and analytical uses of statistics in the fields of economics and commerce.

Prerequisite—MATHEMATICS 3A. Text-books: to be announced. Supplementary readings will be assigned.

Reference will also be made to Croxton and Crowden, *Applied General Statistics* (Prentice-Hall 2nd Ed.)

Monday, Wednesday, Friday at 10

Professor McDUGALL

ECONOMICS 12. *Money, Banking and International Trade*.

A general course concerned with national and international monetary theory and problems. Topics include money and prices, commercial and central banking, international payments and foreign exchange, employment theory and business cycles.

Prerequisite—Grade B in ECONOMICS 1 or 4 or the permission of the Department. Assigned readings.

Tuesday, Thursday, Saturday at 11

Professor SLATER

ECONOMICS 13. *Introduction to Accounting and Finance*.

An introductory study of accounting method with a related examination of some of the chief problems of corporation finance. For honours students whose major subject is Economics, this course has a weight of two and one-half hours per week.

Readings to be assigned.

Monday, Wednesday, Friday at 11

Professor SMAILS

ECONOMICS 15. *Modern Economic Theory*.

A brief study of the development of modern schools of economic thought followed by discussion of the theory of equilibrium.

Prerequisite—ECONOMICS 1 or 10. Text-books: Gray, *The Development of Economic Doctrine* (Longmans); Stigler, *The Theory of Price* (Macmillan). References: Cassel, *Theory of Social Economy* (Harcourt, Brace); Marshall, *Principles of Economics* (Macmillan); Joan Robinson, *Theory of Imperfect Competition* (Macmillan); Chamberlin, *Theory of Monopolistic Competition* (Harvard University Press).

Monday, Wednesday, Friday at 2.30

Professor C. A. CURTIS

ECONOMICS 18. *Canadian Economic Problems*.

A seminar course in a selected number of current Canadian economic problems. The course will include an introductory survey of Canadian economic history. The economic history and theory appropriate to the discussion of each problem will be explored in some detail.

Text-books and readings to be assigned.

Tuesday and Thursday at 2.30

Professor KNOX

Politics and Economics

ECONOMICS 20. *Monetary and Business Cycle Theory and Policy.*

A seminar course in monetary and business cycle theory and policy.

Prerequisite—ECONOMICS 12. Text-books: Keynes, *General Theory of Employment, Interest, and Money* (Macmillan, 1936); Gordon, *Business Fluctuations* (Harper, 1952); Hansen, *A Guide to Keynes* (McGraw-Hill, 1953).

Tuesday, Thursday, Saturday at 10

Professor URQUHART

ECONOMICS 21. *Applied Economics.*

A study of the application of economic theory to the problems of the distribution of national wealth and income as affected by monopoly, public finance, and other public policies.

Prerequisite—ECONOMICS 1 or 10, 12 and the permission of the Department. Text-book: Pigou, *Economics of Welfare* (Macmillan).

Monday, Wednesday, Friday at 10

Professor C. A. CURTIS

ECONOMICS 23. *Industrial Relations.*

This course will deal with the main economic and social forces which affect employer-employee relationships.

Prerequisite—ECONOMICS 1 or 10. Text-book: Alfred Kuhn, *Labor Institutions and Economics* (Rinehart). Assigned readings.

Monday, Wednesday, Friday at 11

Professor C. H. CURTIS

ECONOMICS 24. *International Economics.*

A seminar course. Prerequisite—ECONOMICS 1 or 10, 12 and the permission of the Department. Text-book: Kindleberger, *International Economics* (Irwin, 1953).

Tuesday and Thursday at 10

Professor SLATER

ECONOMICS 25. *Economic History.*

A study of recent economic history with special reference to North America.

A course one hour per week open only to honours students taking a major in Economics, to be taken along with Economics R1. Economics 25 and R1 count as one course. Assigned readings.

Thursday at 1.30

Principal MACKINTOSH

ECONOMICS R1. *Economic History of Canada and the United States.*

ECONOMICS R2. *Contemporary Economic Problems.*

ECONOMICS R3. *Thesis.*

Students registered in any of these reading courses should obtain the syllabus of readings and instructions from the Department. Thesis topics are to be selected in consultation with members of the Department and the thesis in finished form is to be submitted to the Department by March 31.

For graduate courses see the *Calendar of Graduate Studies*.

Politics

POLITICS 2. *Introduction to Government and Politics.*

A comparative survey of the structure of present day democratic governments and the effect on them of the expansion of governmental functions in the twentieth century.

Text-book: Corry, *Democratic Government and Politics*, rev. ed., 1951 (University of Toronto Press).

Monday, Wednesday at 8; Thursday, Friday at 1.30 (in Sections).

Professor THORBURN

POLITICS 30. *Elements of Political Science.*

An analysis of the principal concepts of political science.

Prerequisite—POLITICS 2. Text-book: MacIver, *The Web of Government* (Macmillan). Assigned readings.

Tuesday, Thursday, Saturday at 10

Professor HODGETTS

POLITICS 31. *Canadian Government and Constitutional Law.*

A critical study of the governmental institutions of Canada and in particular of the British North America Act and the federal system.

Students without POLITICS 30 must take it concurrently with this course. Text-books: Dawson, *The Government of Canada* (University of Toronto Press); selected cases from Cameron, *The Canadian Constitution and the Judicial Committee*; selected readings from the *Report of the Commission on Dominion-Provincial Relations* and from Appendices thereto.

Monday, Wednesday, Friday at 9

Professor THORBURN

POLITICS 32. *Modern Political Thought.*

A survey of political thought since Machiavelli.

Prerequisite—POLITICS 30. Text-book: Sabine, *A History of Political Theory* (Henry Holt). Assigned readings.

Not offered in 1958-9

Tuesday, Thursday, Saturday at 9

Professor CORRY

POLITICS 35. *International Politics.*

An analytical study of the components of national power, methods in the pursuit of national interests, and of international order.

Prerequisite—POLITICS 30. It is recommended that students read a good text in modern history before taking this course. Those wishing to read for this course prior to registering in it should consult some of the following: Strausz-Hupé and Possony, *International Relations* (McGraw-Hill); Morgenthau, *Politics among Nations* (Knopf); Wight, *Power Politics* (R.I.I.A.); Schuman, *International Politics* (McGraw-Hill); Armstrong, ed. *The Foreign Affairs Reader* (Harper); Morgenthau and Thompson, edd. *Principles and Problems of International Relations* (Knopf).

Tuesday, Thursday at 11

Not offered in 1959-60.

Professor MEISEL

POLITICS 36. *The Processes of American Government.*

A survey of democratic processes with reference to the role of political parties and of group activity generally.

Students without POLITICS 30 must take it concurrently with this course.

Assigned readings.

Monday, Wednesday, Friday at 9

Professor HODGETTS

POLITICS 37. *Public Administration.*

A comparative analysis of the structure, management and general control of the public services in Great Britain, United States and Canada.

Sociology—Geography

Prerequisite—POLITICS 30. Assigned readings.

Monday, Wednesday at 11

Not offered in 1957-8

POLITICS 39. *Municipal Government.*

A survey of functions and administration of municipal government and its place in the structure of Canadian government with some consideration of comparative local government and the principles of town planning.

Prerequisite—POLITICS 30, except where special permission is secured from the instructor. Prescribed text: K. G. Crawford, *Canadian Municipal Government* (University of Toronto Press). Assigned readings.

Monday, Wednesday, Friday at 10

Professor CRAWFORD

Reading Courses

POLITICS R1. *The Government of Great Britain and the Commonwealth.*

Students may obtain reading references on application to the member of the Department responsible for the course, and they are expected to discuss their reading with him throughout the year.

Professor HODGETTS

POLITICS R2. *Comparative Government. (The Soviet Union, France and some other contemporary governments)*

Students may obtain reading references on application to the member of the Department responsible for the course, and they are expected to discuss their reading with him throughout the year.

Professor MEISEL

POLITICS R3. *Thesis.*

Subject to be selected after consultation with members of the Department. The thesis must be submitted to the Department by March 31.

For Graduate Courses see the *Calendar of Graduate Studies*.

Sociology

SOCIOLOGY 1. *Introduction to Sociology.*

An analysis of the principal concepts of sociology.

Prerequisite—One of POLITICS 2, PSYCHOLOGY 2, ECONOMICS 1 or 4. Text-books: Davis, *Human Society* (Macmillan); Ruth Benedict, *Patterns of Culture*; Everett C. Hughes, *French Canada in Transition*; Riesman, *The Lonely Crowd* (Anchor Edition, Doubleday); Marx and Engels, *Communist Manifesto*.

Monday, Wednesday, Friday at 11

Professor MEISEL

Geography

GEOGRAPHY 1. *Introduction to Geography.*

This course is designed to introduce the basic facts and techniques of physical and cultural geography. Physical geography will include cartography, climate, geology, land forms and vegetation: human geography will include domestication of plants and animals, discussion of a tropical country and a temperate climate country, and the geography of radio.

Text-book: Finch and Trewartha, *Elements of Geography*.

Tuesday and Thursday at 8, Tuesday at 1.30 Section 1, Thursday at 1.30 Section 2. Mr INNIS

GEOGRAPHY 2. *The Geography of Canada.*

A study of Canada which is designed to show the effect of natural resources on human occupancy of the area. Geology, minerals, land forms, climate, vegetation and fauna will be discussed, together with their effect on the historical development and present status of agriculture, mining, transportation, manufacturing and other cultural factors.

Prerequisite—GEOGRAPHY 1.

Assigned readings.

Tuesday, Thursday, Saturday at 10

Mr INNIS

GEOGRAPHY 12. *Resources and Conservation, Geomorphology.*

The course consists of two parts. The first part will be a review of the problem of resources in an expanding economy. Soils, minerals, power, forests, other plants and ocean resources will be discussed and conservation possibilities described where they exist. In the part of the course dealing with geomorphology there will be a discussion of the characteristics and origins of land forms.

Prerequisite—GEOGRAPHY 1 or GEOLOGY 2. Text-book for geomorphology: W. D. Thornbury, *Principles of Geomorphology*.

Lectures—Tuesday, Thursday, and Saturday at 11, first term;

Thursday and Saturday at 11, and Thursday, 3.30-5.30, second term

Mr INNIS

Commerce and Administration

(See also *Calendar of School of Commerce and Administration*)

COMMERCE 50. *Industrial Organization and Management.*

A study of the art of organizing and managing a modern industrial enterprise. In the latter part of the course the emphasis will be on problems of personnel administration in a manufacturing concern.

Text-book: Bethel, Atwater, Smith and Stackman, *Industrial Organization and Management* (McGraw-Hill).

Tuesday, Thursday, Saturday at 9

Professor CAMERON

COMMERCE 52. *Introduction to Marketing.*

An introductory study of marketing problems.

Text-book: To be announced.

Tuesday, Thursday, Saturday at 10

Professor MAY

COMMERCE 53. *Marketing.*

A study of the marketing problems and policies of individual business firms.

Text-book to be announced.

Monday, Wednesday, Friday at 10

Professor HAND

COMMERCE 54. *Business Finance.*

A study of the financial problems of the business enterprise.

Monday, Wednesday at 8.30

Professor MACPHERSON

Commerce

COMMERCE 55. *Investment Markets.*

An historical and statistical study of the markets for securities.

Monday and Friday at 11

Professor McDougall

COMMERCE 59. *Business Investigation and Research.*

An introduction to research methods. The student is required to select a topic and, under direction, to investigate and report upon it.

Hours to be arranged

Professor McDougall

COMMERCE 60. *Commercial Law.*

A study of the elements of commercial law, including the general principles of the law of contract and agency and the law relating to sale of goods, negotiable instruments, partnerships and companies.

Text-books: Anson, *Principles of The English Law of Contract* (20th ed., 1952 Oxford); Falconbridge and Smith, *Manual of Canadian Business Law* (Pitman).

Reference texts: Carrothers, *Cases and Materials on Commercial Law* (The University of British Columbia); Caporn, *Cases on Contracts* (Stevens and Sons); Falconbridge, *Law of Negotiable Instruments in Canada* (Ryerson); *The Corporations Act (Ontario), 1953*; *The Companies Act (Canada), 1934*, and other statutes.

Tuesday, Thursday, Saturday at 9

Professor Smyth

COMMERCE 63. *Elements of Accounting.*

An introductory study of the principles and practice of accounting. This course is for students who are proceeding to the degree of Bachelor of Commerce. Arts candidates who are interested in accounting should register in ECONOMICS 13.

Text-books: Smyth, *The Basis of Accounting* (Ryerson); Smyth, *An Introduction to Accounting Method* (published by the author), 1955 edition; Thomas, *Introductory Accounting Practice Set* (The University of British Columbia), 2nd edition, 1957.

Tuesday, Thursday, Saturday at 10 (Section 1), at 11 (Section 2).

Professors Smyth and Galvin

COMMERCE 64. *Intermediate Accounting.*

A course in which the studies of COMMERCE 63 are carried to a more advanced stage and some further problems are considered.

Reading: Smails, *Accounting Principles and Practice*, 5th ed. (Ryerson); Paton and Paton, *Corporation Accounts and Statements* (Macmillan).

Tuesday, Thursday, Saturday at 10

Professor Smails

COMMERCE 66A. *Cost Accounting.*

This course presents the principles and methods of cost accounting.

Text-book: Hadley Editorial Staff, *Cost Accounting* (McGraw-Hill).

Tuesday, Thursday, Saturday at 9

Professor Smails

COMMERCE 67B. *Auditing and Internal Control.*

A study of systems of internal control, the functions of internal and external auditors, and audit procedure generally.

Text-books: Smails, *Auditing*, 4th ed. (Pitman); *Auditing Standards and Audits by Certified Public Accountants* (American Institute of Accountants).

Tuesday, Thursday, Saturday at 9

Professor Smails

COMMERCE 68. *Accounting and Taxation Problems.*

A study of income taxation law and practice, succession duties and modern accounting thought and procedures including consolidations, funds statements, methods of inventory valuation, executorship accounting and social accounting.

Students in this course are required to subscribe to *The Accounting Review* and *The Master Tax Guide* published by the Commerce Clearing House.

Monday and Wednesday at 11

Professor BENSON

COMMERCE 70. *Seminar.*

A weekly meeting of the graduating class at which an attempt is made to discuss the central problems of business administration and the relevance to executive decisions of techniques studied in other courses. Cases will be used and business executives will be invited to discuss their problems with the group.

Text-books: Smith and Christensen, *Policy Formulation and Administration* (Irwin). Koontz and O'Donnell, *Principles of Management* (McGraw-Hill).

Reference texts: Glover and Hower, *The Administrator* (Irwin); Brown, *Social Psychology of Industry* (Pelican); Lee, *Language Habits in Human Affairs* (Harper); Bursk, *Human Relations for Management* (Harper); Dean, *Managerial Economics* (Prentice-Hall); Jones, *Executive Decision-making* (Irwin); Barnard, *Functions of the Executive* (Harvard); Haire, *Psychology in Management* (McGraw-Hill).

Monday and Wednesday at 1.30.

Professor HAND

Psychology

J. M. BLACKBURN, B.Sc., Ph.D., *Professor*

R. BRUCE SLOANE, M.B., B.S., M.D., M.R.C.P., *Professor of Psychiatry*

P. H. R. JAMES, B.A., Ph.D., *Associate Professor*

ISABEL M. LAIRD, M.A., B.Ed., F.B.Ps.S., *Assistant Professor*

G. L. MANGAN, M.A., Dip. Ed., Ed.B., Ph.D., *Assistant Professor*

J. S. SUTHERLAND, M.A., *Instructor*

A. KAPOs, M.A., Ph.D., *Research Associate*

PSYCHOLOGY 2 is normally a prerequisite to all other courses in Psychology, but in special cases students may be permitted to take PSYCHOLOGY 4 (*Fields of Psychology*) before taking Psychology 2 or to take PSYCHOLOGY 2 concurrently with one or more other courses in Psychology.

Students choosing Psychology as one of the subjects of concentration on the General Course take PSYCHOLOGY 2 (*An Introduction to Psychology*), and two of PSYCHOLOGY 3 (*Educational Psychology*), PSYCHOLOGY 4 (*Fields of Psychology*), PSYCHOLOGY 6 (*Social Psychology*) and PSYCHOLOGY 8 (*Child Psychology*). Those wishing to make a group of four or five for the General Course normally take PSYCHOLOGY 2, 4

Psychology

and two or three courses selected from PSYCHOLOGY 3, 6, 8 and SOCIOLOGY 1. Alterations in these prescriptions may be made with the consent of the department.

For information about scholarships in Psychology, see page 65.

THE HONOURS COURSE IN PSYCHOLOGY

Candidates planning to take the Honours Course in Psychology are strongly advised to take Grade XIII Mathematics (including algebra and geometry) or Mathematics 1. They are advised to take other Grade XIII subjects as follows: English, a language, a science (Biology is recommended), and a fifth subject, which may be a second language, a second science (Physics is recommended), or History.

The usual order in which courses are taken is as follows:—

(a) The Major

First year

PHILOSOPHY 1—*Introduction to Philosophy*

PSYCHOLOGY 2—*An Introduction to Psychology*

Second year

MATHEMATICS 3—*Statistics*

PSYCHOLOGY 15—*Experimental Psychology*

Third year

PSYCHOLOGY 26—*Theory and Practice of Mental Tests*

Third or Fourth year

PSYCHOLOGY 31—*Systematic Psychology*

Fourth year

PSYCHOLOGY 30—*Experimental Problems*

Second, Third or Fourth Year

Two of

PSYCHOLOGY 12—*Child Psychology*

23—*Social Psychology* (offered in alternate years)

24—*Theories of Personality*

35—*Abnormal and Clinical Psychology*

and

PSYCHOLOGY R1—*Applied Psychology*

R2—*Physiological and Comparative Psychology*

R3—*Learning and Perception*

Students wishing to enter upon a major in Psychology in their second year, having taken in their first year no Psychology or Philosophy course, may have an alternative programme planned for them by the Department

which will usually permit them to graduate in the Spring of their fourth year.

(b) The Minor

BIOLOGY 3, 16, 19 or 45 and PHYSIOLOGY 10; or ECONOMICS 1 or 10, 4, 12, and two further courses in Economics; or POLITICS 2, 30, 31, and two courses in Politics selected from 32, 35, 36, 37, 39; or MATHEMATICS 2, 10, 13 and one of MATHEMATICS 19, 20. A candidate who wishes to take some other subject as minor may do so with the consent of the Department of Psychology.

(c) General course to complete the work for the degree: ENGLISH 2.

(d) Two general examinations in Psychology.

A minor in Psychology is ordinarily PSYCHOLOGY 2, MATHEMATICS 3, PSYCHOLOGY 15, 31, and one other lecture course. Other psychology minors may be arranged with the consent of the major department.

Students taking Psychology as the major are advised to include French or German in their course. This is of particular importance to those who plan to proceed to graduate work.

COURSES OF INSTRUCTION

PSYCHOLOGY 2. *An Introduction to Psychology.*

An introductory survey of psychology as both a biological and a social science.

Text-books: C. T. Morgan, *Introduction to Psychology* (McGraw-Hill, 1956); F. S. Keller & W. N. Schoenfeld, *Principles of Psychology* (Appleton-Century, 1950); L. W. Crafts, T. C. Schneirla, E. E. Robinson & R. W. Gilbert, *Recent Experiments in Psychology* (McGraw-Hill, 2nd Ed., 1950).

Lectures—Monday, Wednesday and alternate Fridays at 10; also in sections on the other Fridays at 10.00-11.00, or 1.30-2.30 or 2.30-3.30.

Professor JAMES

PSYCHOLOGY 3. *Educational Psychology.*

Application of the science of psychology in the science and art of education. Outline of the phases of psychological maturity, for the individual and in groups. Studies in classroom behaviour, including the psychology of teachers. Dynamics of the learning process. Techniques of moral training, mastery of skills, and the handling of those who are intellectually, physically, or personally unfitted for ordinary educational routine.

Text-books: Sorenson, *Psychology in Education*, (McGraw-Hill); Colardarci, *Educational Psychology* (Readings), (Macmillan Co. of Canada Ltd.).

Supplementary reading: A. O. Heck, *The Education of Exceptional Children* (McGraw-Hill); M. Mead (Ed.), *Cultural Patterns and Technical Change*, (originally published by UNESCO, now available in Mentor Books, M.D. 134).

Lectures—Tuesday, Thursday, 4.30-6.

Professor LAIRD

Psychology

PSYCHOLOGY 4. *Fields of Psychology.*

A survey of the application of psychology to different fields, such as child psychology, industrial psychology, clinical psychology, physiological psychology, social psychology, educational psychology, personnel and vocational psychology.

Text-book: F. L. Marcuse, *Areas of Psychology* (Harper, 1954). Supplementary readings: J. S. Gray, *Psychology Applied to Human Affairs* (McGraw-Hill, 2nd ed. 1954); R. H. Seashore, *Fields of Psychology* (Holt, 1942); F. K. Berrien, *Practical Psychology* (Macmillan, 1949); J. P. Guilford, *Fields of Psychology* (Clarke Irwin rev. ed. 1950); H. E. Burt, *Applied Psychology* (Prentice-Hall abridged ed., 1952).

Monday, Wednesday, Friday at 9

Professor MANGAN

PSYCHOLOGY 6. *An Introduction to Social Psychology.*

Not offered intramurally in 1957-8.

PSYCHOLOGY 8. *Principles of Child Development.*

A discussion of methods of child study, of the process of development and of the factors which influence development. A minimum of twenty-five hours of field work will be required.

Text-books: E. Hurlock, *Child Development* (McGraw-Hill) 3rd. ed.; J. M. Seidman, Ed., *The Adolescent* (readings), (Macmillan Co. of Canada); Witmer and Kotinsky, Eds., *Personality in the Making* (Harper); Jean Piaget, *Language and Thought of the Child* (Meridian Books, M. 10); Ilg & Ames, *Child Behaviour* (Dell Books-D180).

Tuesday and Thursday at 10

Professor LAIRD

PSYCHOLOGY 12. *Child Psychology.*

Patterns of child rearing in several cultures, in different families, and in conditions other than the family setting. Emphasis on methods of studying children, including prescribed observation of girls and boys on formal and informal occasions. Contrasting theories about individual differences in behaviour and personality.

The practical work will be arranged after consideration of the special interests and skills of students. Students should have read a basic text, e.g. E. Hurlock, *Developmental Psychology* (1953).

Text-books: Jean Piaget, *Language and Thought of the Child* (Meridian Books, M. 10, Noonday Press, N.Y.); W. E. Martin and C. B. Stendler, *Readings in Child Development* (Harcourt Brace, 1954); M. Mead and M. Wolfenstein, edd. *Childhood in Contemporary Cultures* (University of Chicago Press, 1955).

Further readings recommended in class.

Tuesday and Thursday at 8.

Professor LAIRD

PSYCHOLOGY 15. *Experimental Psychology.*

An introduction to the problems and methods of experimental psychology. Students will perform experiments in human sensation, perception, motivation, perceptual-motor and verbal learning, and thinking. Recent research will be discussed. The emphasis in this course will be on experimental design.

Text-books: B. J. Underwood, *Experimental Psychology* (Appleton-Century-Crofts, 1949); E. G. Boring, H. S. Langfeld and H. P. Weld, *Foundations of Psychology* (Wiley, 1948). Assigned supplementary readings.

Lectures—Tuesday and Thursday at 11.

Laboratory—Thursday 2-5

Professor MANGAN

PSYCHOLOGY 23. *Social Psychology.*

Theories, problems and methods of social psychology; human interaction and group theory; the relation between the self and the social group; social norms and social roles; the effect of group conditions on judgments and attitudes; group conflict and group solidarity.

Assigned readings.

Monday, Wednesday, Friday at 8

Professor BLACKBURN

PSYCHOLOGY 24. *Theories of Personality.*

Theories of personality and personality dynamics will be studied. There will be special emphasis on methods of measuring personality, and on experimental research in the area of personality.

Text-books: C. S. Hall and G. Lindzey, *Theories of Personality* (Wiley, 1957), J. C. Coleman, *Abnormal Psychology and Modern Life* (Scott, Foresman, 2nd ed. 1956).

Also assigned readings.

Monday, Wednesday at 11-12.30.

Professor BLACKBURN

PSYCHOLOGY 26. *Theory and Practice of Mental Tests.*

An introduction to the theory and practice of psychological testing. The first term will be devoted to test theory, including the development of basic equations concerned with scaling, item analysis, reliability, validity, and scoring. The second term will be given to a consideration of current psychological tests, especially the revised Stanford-Binet and the Wechsler-Bellevue tests.

Text-books: A. Anastasi, *Psychological Testing* (Macmillan, 1954); D. Wechsler, *The Measurement of Adult Intelligence* (Williams and Wolkins, 1944); P. E. Vernon, *The Structure of Human Abilities* (Wiley, 1950).

Supplementary Readings: L. M. Terman and M. A. Merrill, *Measuring Intelligence* (Houghton Mifflin, 1937); H. Gulliksen, *Theory of Mental Tests* (Wiley, 1950); J. P. Guilford, *Psychometric Methods* (McGraw-Hill, 1936); R. L. Thorndike and E. Hagen, *Measurement and Evaluation in Psychology and Education* (Wiley, 1955). Assigned supplementary readings.

Prerequisite—MATHEMATICS 3A, 3B or equivalent.

Tuesday, Thursday at 9.

Professor MANGAN

PSYCHOLOGY 30. *Experimental Problems.*

A seminar in research problems. Recent research will be discussed and each student will develop and carry out an original investigation.

Assigned readings.

Hours by arrangement.

Professor JAMES

PSYCHOLOGY 31. *Systematic Psychology.*

Historical development of psychological theory; present psychological doctrines and theories.

Religion

Text-books: To be announced.
Monday, Wednesday, Friday at 9.

Professor JAMES

PSYCHOLOGY 35. *Abnormal and Clinical Psychology.*

Lectures and demonstrations having a special bearing on the psychoses and psychoneuroses. The purpose is to give the student a first hand acquaintance with clinical material and problems. The course is given to specially qualified students and by arrangement with the instructor and the department.

Prerequisite—PSYCHOLOGY 24.

Texts and hours by arrangement.

Dr SLOANE and Mr SUTHERLAND

READING COURSES

PSYCHOLOGY R1. *Applied Psychology.*

J. Tiffin, *Industrial Psychology* (Prentice-Hall, 1953); R. L. Thorndike, *Personnel Selection* (Wiley, 1949); A. Chapanis, W. R. Garner and C. T. Morgan, *Applied Experimental Psychology* (Wiley, 1949); K. C. Garrison and J. S. Gray, *Educational Psychology* (Appleton-Century-Crofts, 1955).

Professor MANGAN

PSYCHOLOGY R2. *Physiological and Comparative Psychology.*

C. T. Morgan & E. Stellar, *Physiological Psychology*, (McGraw-Hill, 2nd Ed., 1950); M. A. Wenger, F. N. Jones, & M. H. Jones, *Physiological Psychology* (Holt, 1956); N. Tinbergen, *The Study of Instinct* (Oxford, 1951); E. D. Adrian, *The Basis of Sensation* (Christophers, 1928).

Professor JAMES

PSYCHOLOGY R3. *Learning and Perception.*

J. A. McGeoch and A. L. Irion, *The Psychology of Human Learning* (Longmans Green, 2nd Ed., 1952); R. S. Woodworth and H. Schlosberg, *Experimental Psychology* (Holt, 2nd Ed., 1954); B. R. Bugelski, *The Psychology of Learning* (Holt, 1956).

Professor JAMES

Religion

Rev. ELIAS ANDREWS, B.A., M.A., B.D., Ph.D., D.Litt., *Professor*

Rev. D. M. MATHERS, M.A., B.D., Ph.D., *Associate Professor*

Rev. ERNEST G. CLARKE, M.A., B.D., *Lecturer in Hebrew*

COURSES OF INSTRUCTION

RELIGION 1. *Old Testament Literature and History.*

A study of the origin and religious development of the Hebrew people, the sources of their literature, and the various types of writing—historical, prophetic, legal, poetical, wisdom, apocalyptic, devotional—which grew out of their religious life. The study is pursued against the political, social, and cultural background of the ancient world. This course is not open to students in Theology.

Text-book: J. Bewer, *The Literature of the Old Testament* (Columbia University Press). Reference books: W. F. Albright, *The Biblical Period*; T. W. Manson, Ed., *A Companion to the Bible* (T. and T. Clark).

Tuesday, Thursday, Friday at 1.30

Professor CLARKE

RELIGION 2. *New Testament Literature and History.*

A study of the background of New Testament life and times, the rise and expansion of Christianity, and those currents of life and thought in the church of the first century from which the literature of the New Testament emerged. Attention is given to the literary origins of the Gospels, the life and teaching of Jesus, the life and letters of Paul, the Johannine and later writings including the Apocalypse. This course is not open to students in Theology.

Text-books: Henshaw, *New Testament Literature* (Allen & Unwin); Laymon, *The Life and Teachings of Jesus* (Abingdon); *The Revised Standard Version of the New Testament*.

Tuesday, Thursday, Friday at 2.30

Professor ANDREWS

RELIGION 3. *The Chief Non-Christian Religions of the World.*

Primitive religion; the religions of ancient Egypt and ancient Greece; Hinduism, Buddhism, the religions of China and Japan, Judaism, Zoroastrianism and Islam.

Text-books: Noss, *Man's Religions* (Macmillan); A. C. Bouquet, *Sacred Books of the World* (Penguin Books).

Not offered in 1957-8

Professor MATHERS

RELIGION 4. *Christianity within Western Civilization.*

Prerequisite: RELIGION 2.

The impact of Christianity on the life of the Graeco-Roman world; the influence of Christianity upon social, intellectual and religious life during the mediaeval period; the Protestant and Catholic Reformations; Christianity and the expansion of the European peoples after the discovery of the New World; Christianity in reaction with modern Western Culture; repudiation and revival; the position of present-day Christianity.

Text-books: Clarke, *A Short History of the Christian Church* (Longmans); Willey, *Christianity, Past and Present* (Cambridge).

Not offered in 1957-8

Professor MATHERS

RELIGION 5. *The Interpretation of Religion.*

An examination of the origin, nature and development of religion, the religious consciousness, and the various religious patterns that have emerged among mankind, including the Christian religion. Questions such as the relation between Science and Religion, the spiritual interpretation of the world, the problem of suffering, and related subjects will be dealt with.

Text-book: King, *Introduction to Religion* (Harper's). Supplementary Reference Texts: Nevius, *Religion as Experience and Truth* (Westminster); Trueblood, *The Logic of Belief* (Harper's); Pratt, *The Religious Consciousness* (Macmillan).

Tuesday, Thursday, Friday at 1.30

Professor ANDREWS

Russian Language and Literature

VALENTINA N. KROTKOV, M.A., *Instructor*

COURSE OF INSTRUCTION

RUSSIAN A. *Elementary Russian*.

The object of this course is to give students the common vocabulary, the fundamental grammatical structure of the Russian language and a brief introduction to Russian literature. As this is an introductory course, no previous knowledge of the language is required.

Text-book: A. Semeonoff, *A New Russian Grammar*.

Hours to be arranged.

Spanish Language and Literature

H. W. HILBORN, M.A., Ph.D., *Professor*

A. M. FOX, M.A., *Assistant Professor*

J. K. McDONALD, M.A., *Lecturer* (on leave of absence, 1957-8)

E. E. BRANDENBURG, B.S. in Ed., *Interim Lecturer*

LORETTA JOHNSON, B.A., *Instructor*

SPANISH A (*Introductory Spanish*) is a beginners' course. It may be counted towards a General degree or as an optional course towards an Honours degree in another subject, but not towards a major or minor in Spanish. Students who enter the University without matriculation in Spanish may, however, complete an Honours Course in this subject in the usual time by taking SPANISH A in their first winter session and SPANISH 1 in the following summer. Such students, provided that they obtain Grade A standing in SPANISH A at the December examination, may form a group to begin instruction in SPANISH 1 in January. The work completed in the winter session will be considered as part of the requirement for the extramural summer course.

SPANISH 1 (*Elementary Spanish*) is the first course for students with Grade XII standing or with Grade XIII standing with less than second class honours.

SPANISH 2 (*Intermediate Spanish*) is the first course for students with at least second class honours in the Grade XIII examinations.

Students offering Spanish as one of the subjects of concentration on the General Course may make up groups of three, four or five courses by taking

SPANISH A and 1, *or*

SPANISH 1 and 2, *or*

SPANISH 2 and 6 (*Commercial Spanish; Don Quijote*), or 10 (*Modern Literature, Composition*), and one, two, or three other courses selected from SPANISH 2, 6, 10, 22 (*Drama and Lyric Poetry of the Golden Age; Phonology and Morphology*), 24 (*Cervantes and His Times; Advanced Composition*), 29 (*The Modern Theatre; Phonetics*), 30 (*Literature of Spanish America; Advanced Composition and Conversation*).

THE HONOURS COURSE IN SPANISH

Candidates planning to take the Honours Course in Spanish are advised to offer Grade XIII subjects as follows: English, Latin, French, Spanish, a science.

The programme for the degree is as follows:

(a) The Major

SPANISH 2—*Language; Modern Authors; Introduction to Civilization.*

10—*Modern Literature; Composition*

22—*Drama and Lyric Poetry of the Golden Age; Phonology and Morphology*

24—*Cervantes; Advanced Composition; Civilization*

29—*The Modern Theatre; Phonetics*

30—*Introduction to the Thought and Literature of Spanish America; Advanced Composition and Conversation*

With two courses to be selected from LATIN 2 (*Translation and Prose Composition*), FRENCH 2 (*Intermediate French*), an Honours course in English, HISTORY 12 (*Mediaeval Europe*), or HISTORY 24 (*The Renaissance and the Reformation*), ITALIAN 1 (*Intermediate Italian*).

SPANISH R1—*Civilización Española*

R2—*Autores Clásicos*

R3—*Autores Españoles e Hispanoamericanos Modernos*

ITALIAN 1, if not selected previously, may be substituted for one of the reading courses.

(b) The Minor

FRENCH 2, 10, 14 and one further course; or

GERMAN 2, 10, and two Honours courses in German; or

ENGLISH 2, 10, and two chosen from 15, 19, 20, 21, 22 or

LATIN 2, 12 or 13, 20, 30.

Spanish

A candidate who wishes to take some other subject as minor may do so with the consent of the Department of Spanish.

(c) General courses to complete the work for degree: With French or German or Latin as minor: ENGLISH 2, PHILOSOPHY 1, a science. If the candidate has Grade XIII standing in a science, he may take a free option as the third general course. With English as minor: PHILOSOPHY 1, a science, a free option. If the candidate has Grade XIII standing in a science, he may take a free option as the second general course.

(d) Two general examinations in Spanish.

For information about the course of study leading to the High School Teaching Certificate in Spanish and English or Spanish and French, see page 97. For information about scholarships in Spanish, see page 65.

A minor in Spanish normally consists of SPANISH 2, 10, and two further Honours courses.

Students offering Spanish for the General Honours Course will take the minor as prescribed in the preceding paragraph and SPANISH R1.

COURSES OF INSTRUCTION

SPANISH A. *Introductory Spanish.*

For students with little or no previous knowledge of Spanish. The course comprises a study of the essentials of Spanish grammar with exercises in translation into Spanish, pronunciation, and extensive reading of graded Spanish texts designed to lead the student from simple Spanish to prose of moderate difficulty and selected to illustrate various aspects of Spanish civilization. Oral work in connection with the texts.

Text-books: Barlow, *Basic Elements of Spanish* (Appleton-Century-Crofts)*; Leavitt and Stoudemire, *¡Vamos a leer!* (Holt); Barlow and Steel, *Noche oscura en Lima* (Crofts).

Monday, Wednesday, Friday at 9

Monday, Wednesday, Friday at 10

Monday, Wednesday, Friday at 11

Tuesday, Thursday, Saturday at 9

Professor FOX, Mr BRANDENBURG, and Mrs JOHNSON

SPANISH 1. *Elementary Spanish.*

A more detailed study of Spanish grammar, written exercises and composition, the reading of a number of texts and oral work thereon. The reading programme is designed to lead the student from easy texts, dealing with topics of Spanish-American history and culture, through short stories and poems to a standard modern drama.

Prerequisite—SPANISH A or Grade XII Spanish. Text-books: Walsh, *Repaso* (Norton); Crow, *Spanish-American Life* (Holt); Kasten and Neale-Silva, *Lecturas modernas* (Harper); Casona, *La Sirena varada* (Appleton-Century-Crofts).

Monday, Wednesday, Friday at 9;

Monday, Wednesday, Friday at 11

Mr BRANDENBURG

SPANISH 2. *Intermediate Spanish: Language, Modern Authors, Introduction to Civilization of Spain.*

Prerequisite—SPANISH 1 or Grade XIII Spanish with at least second class Honours. Text-books: Loss, *A Brief Spanish Review Grammar* (Ronald Press); Martínez Sierra, *Sueño de una noche de agosto* (Norton); Julio Camba, *La rana viajera* (Heath); Grismer and Arjona, *The Pageant of Spain* (Appleton-Century-Crofts); Ugarte, *España y su civilización*. Conversational guide reading also assigned. Extramural students are to obtain: García-Prada, *Entendámonos* (Houghton-Mifflin).

For SPANISH 2 and all Spanish courses which follow it in this calendar, possession of a good English-Spanish dictionary is essential. Appleton's *Revised Cuyás Spanish Dictionary* (1953) is recommended.

Extramural students must satisfy the oral requirements. Unless these have been met by previous work done at the University, it will be necessary either to complete the course at the Summer School or to take a special oral examination.

Tuesday, Thursday, Saturday at 9, and additional oral work.

Professor FOX

SPANISH 6. *Commercial Spanish. Don Quijote and its Value for the Generation of 1898.*

The study of commercial Spanish, with exercises in Spanish commercial correspondence, constitutes one third of the course.

Prerequisite—SPANISH 1 or Grade XIII Spanish. Text-books: Arjona, *Viaje de negocios* (American Book Company); Cervantes, *Don Quijote de la Mancha*, ed. J. Cano (Macmillan); María de Maeztu, *Antología—Siglo XX, Prosistas españoles* (Espasa-Calpe, Colección Austral), Del Río, *Historia de la literatura española*, Vol. I (Dryden). Readings in *Don Quijote* in addition to those found in Cano's selections will be assigned in Cohen's translation (Penguin).

Tuesday, Thursday, Saturday at 8

Additional time for oral work is required.

Professor HILBORN

General students may be admitted to courses numbered 10 and upward if their previous work in Spanish is of sufficiently high calibre. Before enrolling in such courses they should obtain the consent of the Department.

SPANISH 10. *Modern Literature. Composition.*

Text-books: Guyer and Ugarte, *Pláticas y Temas* (Heath); Pérez Galdós, *Doña Perfecta* (Ginn); Valera, *Pepita Jiménez* (Heath); *Cuentos de Clarín*, ed. García Lorca (Houghton Mifflin); Benavente, *Tres comedias* (Heath); Marquina,

* Extramural students may procure a long-playing record of this text.

Spanish

En Flandes se ha puesto el sol (Heath); Casona, *Nuestra Natacha* (Appleton-Century-Crofts).

Monday, Wednesday, Friday at 9 and additional oral work.

Professor HILBORN

SPANISH 22. *Drama and Lyric Poetry of the Golden Age. Introduction to Spanish Phonology and Morphology.*

A study of representative comedias and lyric poems of the *Siglo de Oro*, along with Spanish Phonology and Morphology.

Text-books: Alpern and Martel, *Diez comedias del Siglo de Oro* (Harper); Marín, *Lira española* (Ryerson Press). This course will require considerable use of the library.

Professor Fox

SPANISH 24. *Cervantes and his Times. Advanced Composition. Civilization.*

Studies relating to the *Quijote*. Exercises in advanced prose composition. Civilization.

Text-book: Miguel de Cervantes Saavedra, *Don Quijote de la Mancha* (in *Colección Austral*, Espasa-Calpe). This course will require considerable use of the library.

Not offered in 1957-8.

SPANISH 29. *The Modern Theatre. Phonetics.*

The development of Spanish drama from the close of the Golden Age to the present with representative dramas assigned for analysis and discussion in class. The course will include a study of Spanish Phonetics as part of the work of the first term.

Text-book: *Nineteenth Century Spanish Plays*, ed. L. E. Brett (Appleton-Century-Crofts); additional dramas will be assigned.

Not offered in 1957-8.

SPANISH 30. *Introduction to the Thought and Literature of Spanish America. Advanced Composition and Conversation.*

Text-book: José Gaos, *Antología del pensamiento de lengua española en la edad contemporánea* (Séneca).

Professor HILBORN

Reading Courses

SPANISH R1. *Civilización Española.*

Designed to acquaint the student with the distinctive features of Spanish civilization and to enable him to make just comparisons between this civilization and others. This course is complementary to the civilization studies of SPANISH 22 and 24.

Rafael Altamira, *Manual de historia de España*, or W. C. Atkinson, *Spain, A Brief History*; N. B. Adams, *España*—sections on history and the arts; Paul Jamot, *La Peinture en Espagne*; Havelock Ellis, *The Soul of Spain*; Tamayo y Baus, *La locura de amor*; Santa Teresa, *Libro de su vida* (*Las misericordias de Dios*); George Borrow, *The Bible in Spain*; Unamuno, *Perplexities and Paradoxes*; Baroja, *Zalacaín el aventurero*; Elliott Paul, *The Life and Death of a*

Spanish Town; Madariaga, Englishmen, Frenchmen, Spaniards. References and a reading plan will be provided by the instructor in charge.

Professor Fox

SPANISH R2. *Autores Clásicos.*

Designed to acquaint the student with the various literary trends which led to Spain's Golden Age, and to give him a clear concept of that age as reflected in its literature. This course is complementary to the literary studies of SPANISH 22 and 24. The Instructor will give occasional guidance to assist in the analysis of literary trends and in the criticism of certain individual works.

Romancero general (Biblioteca de autores españoles, Vol. 16, Nos. 918-950); Garcilaso de la Vega, *Works* (ed. Keniston); Góngora, *Poesías* (ed. Baker, pp. 1-24), *Soledad Primera* (same edition, pp. 46-80); Quevedo, *La vida del Buscón*; Lope de Vega, *Amar sin saber a quién, La moza de cántaro*; Tirso de Molina, *El vergonzoso en palacio*; Alarcón, *Las paredes oyen*; Calderón, *El Mágico prodigioso, El alcalde de Zalamea.*

Professor HILBORN

SPANISH R3. *Autores Españoles e Hispanoamericanos Modernos.*

Designed to acquaint the student with the more important achievements of Spanish literature having a background outside of Spain itself, including the literature of Spanish America. This course is complementary to parts of SPANISH 10 and 30. The instructor will give occasional suggestions to assist the student in his approach to this body of literature. Several histories of literature should be consulted for reference.

Blasco Ibáñez, *Los cuatro jinetes del Apocalipsis*; Pío Baroja, *Paradox, Rey; Azuela, Los de abajo; López y Fuentes, El indio; Altamirano, El zarco; Hernández, Martín Fierro; Gálvez, La pampa y su pasión; Wast, La casa de los cuervos; Florencio Sánchez, La gringa; Barrios, El hermano asno.*

Professor HILBORN

GRADUATE COURSES

For information about graduate courses in Spanish, see the *Calendar of Graduate Studies*.

ITALIAN LANGUAGE AND LITERATURE

The courses in Italian are offered only if they are asked for by five or more students. They are recommended especially for students taking the Honours Course in Spanish or French or the course of study leading to the Interim High School Assistant's Certificate, Type A, in Spanish and French. ITALIAN 1 may be substituted for one of the reading courses or one of the courses given outside the department of Spanish on the major in Spanish.

COURSES OF INSTRUCTION

ITALIAN A. *Introductory Italian.*

The general aims of the course correspond to those of SPANISH A, but the amount of work covered will be considerably greater.

Italian

Text-books: Russo, *Present Day Italian* (Heath); Goggio, *A New Italian Reader for Beginners* (Heath); Kany and Speroni, *Elementary Italian Conversation* (Heath); Bergin, *Modern Italian Short Stories* (Heath).

Hours to be arranged.

Professor HILBORN

ITALIAN 1. *Intermediate Italian and Introduction to Literature.*

A continuation of grammar and oral work, along with a study of some important representative works in Italian literature.

Prerequisite—ITALIAN A or Grade XIII Italian. Text-books: Russo, *Second Year Italian* (Heath); Marraro, *Contemporary Italian Short Stories* (Holt); Pirandello, *Così è se vi pare* (Heath); Giacosa, *Una Partita a scacchi* (Heath); Manzoni, *I Promessi sposi*, edd. Geddes and Wilkins (Heath); Dante, *La vita nuova*, ed. McKenzie (Heath).

Hours to be arranged.

Professor HILBORN

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